ARID ZONE EUCALYPTS OF THE NORTHERN TERRITORY

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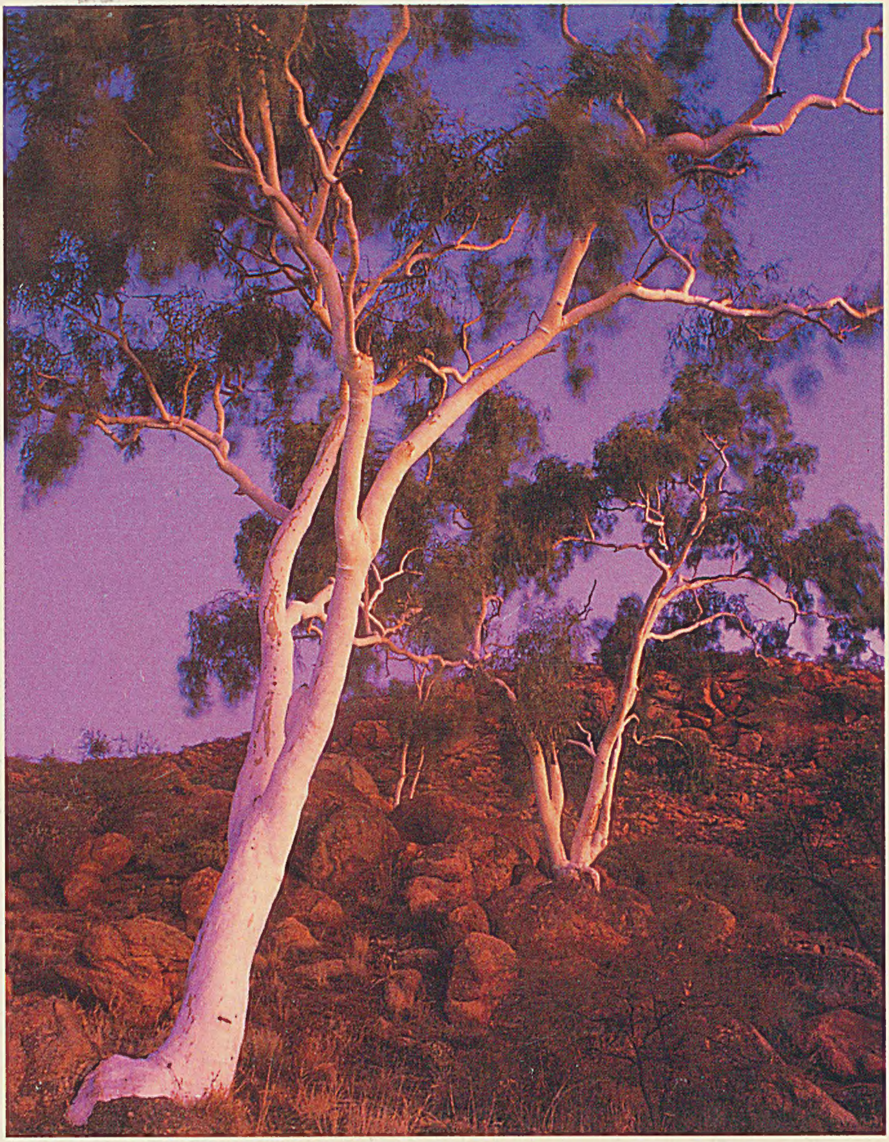

NORTHERN TERRITORY BOTANICAL BULLETIN No.9
CONSERVATION COMMISSION OF THE NORTHERN TERRITORY

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Northern Territory Botanical Bulletin No. 9

Conservation Commission of the Northern Territory

Date Rec'd 7/6/91
Ex.
Northern Terr. Herb
$ 21837
583.42 MYR ARI
Barcode
LRBM 0000924 0

Cover: Ghost Gum, Entrance to the Alice Springs Telegraph Station Historical Reserve, Alice Springs.
Photo by Vic Urban.

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Alice Springs Australia 1990.

ISBN: 0 7245 1923 8
ISSN: 0314 1810

Government Printer of the Northern Territory

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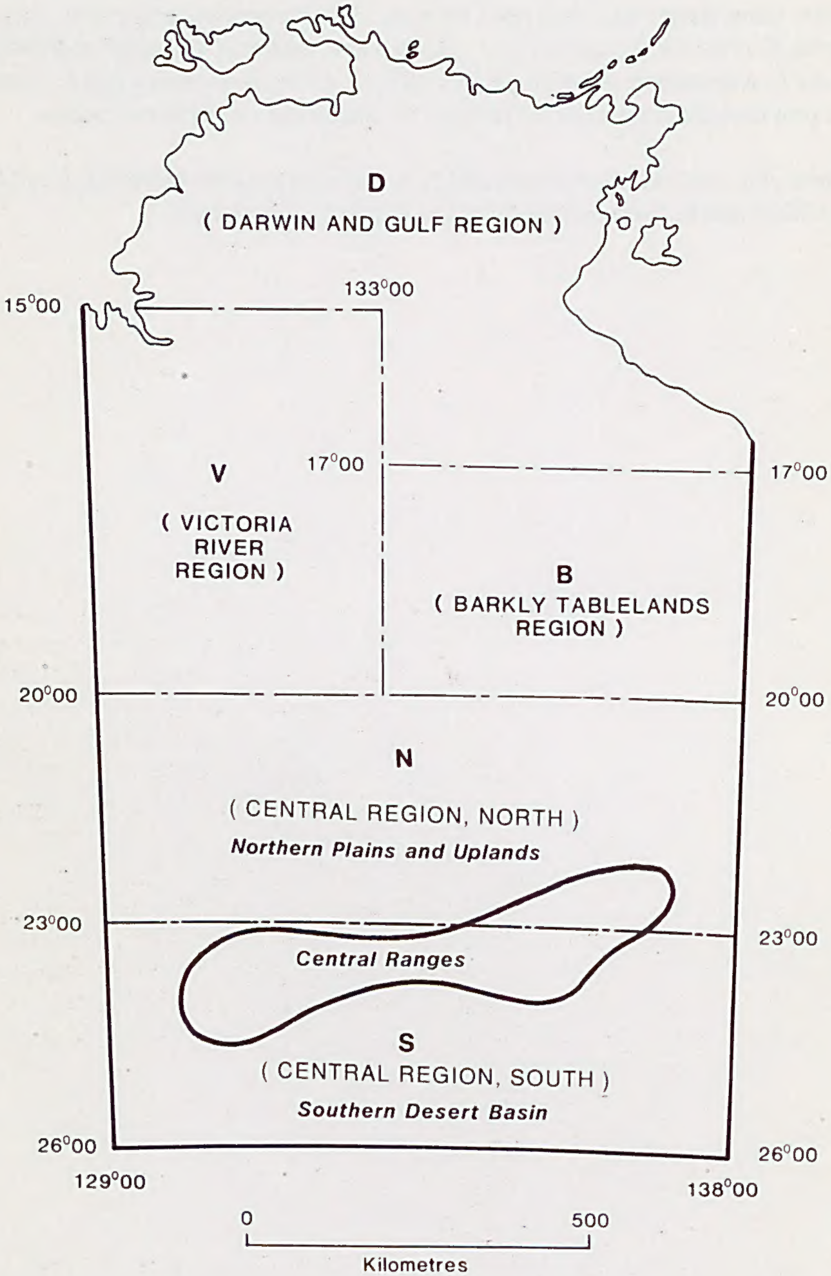
ACKNOWLEDGEMENTS

The authors wish to thank Dave Clarke, Peter Sandell and Lyn Todd for their comments and advice and Greg Leach, Clyde Dunlop, and Mike Gillam for their advice and revision of the manuscript.

Many thanks are also due to the artists who provided the drawings of buds and fruits for this publication: Carol Bailey who illustrated the buds of all the species, fruits of *E. chippendalei*, *E. gamophylla*, *E. orbifolia*, *E. mannensis*, *E. setosa* and *E. opaca* as well as the individual close ups of fruits for *E. leucophloia*, *E. lucens*, *E. microtheca*, *E. normantonensis* and *E. thozetiana*. Jill Hodgson provided illustrations of the fruits of the remaining twenty-three species.

Photographs of *E. orbifolia*, *E. cupularis* and *E. lucens* were provided by Peter Latz, *E. leucophloia* by Mike Gillam and *E. normantonensis* and *E. sparsa* by Greg Leach.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(DARWIN AND GULF REGION)
15°00
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V
(VICTORIA RIVER REGION)
17°00
17°00
B
(BARKLY TABLELANDS REGION)
20°00
20°00
N
(CENTRAL REGION, NORTH)
Northern Plains and Uplands
23°00
23°00
Central Ranges
S
(CENTRAL REGION, SOUTH)
Southern Desert Basin
26°00
26°00
129°00
138°00
0
500
Kilometres

Fig. 1. Botanical regions of the Northern Territory

INTRODUCTION

Twenty-nine species of eucalypts* have been recorded within the arid zone of the Northern Territory. They occur as important components of many habitats within the region ranging from spinifex sandplains to the summits of major mountain ranges.

Many species are utilized by Aboriginals to provide a range of foods: witchetty grubs are collected from the upper root system and trunks (often in *Eucalyptus camaldulensis*), galls and scale from foliage, honey from their flowers and seed from various species including *E. gamophylla* and *E. microtheca*. Gum exudate is often collected and used for medicinal purposes.

In more recent times, many arid zone eucalypts have become the focus of attention for horticulturalists interested in species suitable for amenity planting in arid zone communities. Many species have large and attractive flowers or decorative bark and foliage and lend themselves well to cultivation both in Australia and overseas. Some species have also been subject to research by agriculturalists and foresters involved in land reclamation and fuel-wood production.

This booklet provides an identification key, species descriptions, distributional information, horticultural notes and colour plates for those species occurring in the NT, south of latitude 20° S. This area is subdivided into two botanical districts; Central South (S) from the South Australian border 26°S, to 23°S latitude, and Central North (N) from latitude 23°S to 20°S (Fig. 1).

CLIMATE

The climate in central Australia is arid with extreme daily and seasonal fluctuations in temperature and low and unreliable rainfall. In the Alice Springs (District S) July temperatures range from a mean daily minimum of 5°C to a mean daily maximum of 23°C and in January from a mean daily minimum of 19°C to a mean daily maximum of 36°C. Winter nights in Alice Springs and further to the south often drop below 0°C and the region receives an average of 22 frosts per year. In Tennant Creek, a few kilometres north of District N, July temperatures range from a mean daily minimum of 12°C to a mean daily maximum of 24°C and, in January from a mean daily minimum of 25°C to a mean daily maximum of 37°C. Frosts rarely occur in this district.

Alice Springs has a mean annual rainfall of 287 mm while Tennant Creek has a mean of 476 mm. The southern NT receives its highest rainfall during the summer months as a result of intrusions from the north of moist oceanic air and occasional cyclones which may move inland as rain depressions. Winter rainfall usually results from depressions and associated frontal systems which move from west to east across the more temperate regions of the continent (Kalama and McApline, 1983).

**Carr and Carr (1985) have described twelve species of bloodwood eucalypts from the southern NT. Four of these species have been dealt with in this booklet. The other species, however are extremely difficult to separate using the characters provided by the authors and further research may be required to clarify the status of these.*

EUCALYPT DISTRIBUTION

Eucalypts tend not to dominate the plant communities in arid Australia as they do in the more temperate or coastal areas. The group is nonetheless represented throughout the region by species whose distributions are influenced by a complex of climatic, topographical and geological factors. Although climate does not vary greatly throughout the area, the occurrence of frosts and slightly lower rainfall in the more southerly regions limits the distribution of some species. The region has been divided into three physical provinces on the basis of shared or unique topographical and geological features by Mabbutt (1962) and each province has characteristic plant communities, including eucalypts associated with it.

THE SOUTHERN DESERT BASIN: To the south eastern corner of this basin is found the Simpson Desert with longitudinal sand ridges and occasional projecting stony tablelands and plains. Altitude varies from approximately 60 to 250 m above sea level. Four rivers, the Todd, Hale, Hay and Plenty drain into floodout plains in this area. Eucalypts most commonly found in these river floodouts are *Eucalyptus gamophylla*, *E. microtheca* and *E. camaldulensis*. Much of the remaining sand dune environ is devoid of Eucalypts. To the west are found the dune fields and saline depressions of the Amadeus Basin. Common eucalypts in the dune fields in this area are *E. mannensis*, *E. oxymitra*, *E. gamophylla* and, in the vicinity of Lake Amadeus, *E. gongylocarpa*. Lake Amadeus is approximately 470 m above sea level.

THE CENTRAL RANGES: These ranges run east-west in a more or less unbroken chain for over 400 km, bisecting the region and forming a major drainage divide. They consist of parallel strike ridges of sandstone and limestone and crystalline ridges of gneiss and schist often collectively referred to as the MacDonnell Ranges. Relief frequently exceeds 300 m and the topography is dominated in the western portion by Mt Sonder and, the highest point in the NT, Mt Liebig (1524 m). Eucalypts commonly found on the foothills of these ranges are *E. gamophylla*, *E. intertexta*, *E. gillenii*, *E. socialis*, *E. eremaea* and, on the higher slopes these species co-habit with *E. sessilis*, *E. orbifolia* and *E. lucens*.

THE NORTHERN PLAINS AND UPLANDS: To the north of the central ranges, sandy and lateritic plains are interspersed with dissected uplands including the Dulcie, Barrow Creek, Murchison and Davenport Ranges. These uplands are composed of sandstone and quartzite while the Mt Doreen Ranges further to the west are granite. Relief rarely exceeds 150 m in these uplands and Mt Doreen is 860 m above sea level. Common eucalypts on the sandplains and low rocky ridges are *E. pachyphylla*, *E. odontocarpa*, *E. leucophloia*, *E. setosa* and on the higher, more exposed ridges *E. normantonensis* and *E. aspera*. In the north-western portion of the Tanami desert *E. brevifolia* occurs on low ridges and adjacent sandplains and *E. cupularis* inhabits the drainage channels of the low rocky ranges.

Some habitats occur throughout all provinces and the eucalypts associated with them are consequently widespread. These include *E. camaldulensis* which is commonly seen fringing watercourses, *E. microtheca* in heavy clay soils subject to occasional inundation and *E. opaca* in low lying areas with loamy soils.

COLLECTING EUCALYPTS FOR IDENTIFICATION AND HOW TO USE THE BOOKLET

Eucalypts are most easily identified by examining the characteristics of buds, fruits, leaves and bark. To achieve a positive identification all of these parts should be collected if available, and a written description of the tree and the habitat in which it occurs should be taken. If fruits or buds are absent from the tree they may sometimes be found in the leaf litter on the ground below, although when collected in this manner, care must be taken to ensure that the fruits are from the correct tree.

Several types of leaves are produced at different growth phases of a eucalypt from seedling to adult. Hence leaves on adult branches can often differ from those of seedlings, coppice regrowth or from crown regrowth following damage by fire or insect attack. The key and descriptions in this booklet refer to the foliage stage most commonly found on adult, undamaged trees and this should be taken into account when examining a specimen.

Many species may be identified by direct reference to the species accounts, however a species may be more reliably determined using the key provided on page 15. A key such as this one, presents a series of paired, contrasting statements, each describing particular plant features. To use the key start at 1 and 1a (i.e. the first pair of statements) and select that statement which most closely agrees with your specimen. Once this decision has been made, the number in the right hand column following the statement will indicate the next pair of statements to be evaluated. This process is continued until a name is reached.

Drawings of fruits and buds of each species have also been provided with the individual species descriptions. These are reproduced at life size unless otherwise indicated. Every effort has been made to restrict the use of botanical terms. However, in some cases, especially when referring to buds and fruits, the use of some technical terms has been unavoidable. These terms are explained in the glossary and accompanying diagrams.

PROPAGATION

All eucalypts from the southern NT can be grown easily from seed. The techniques used are the same as those used for many Australian plants and are described in detail in Elliot and Jones (1981). The seed is sprinkled on the surface of germination trays containing 4 to 5 cm of coarse sand and covered with a very thin layer (no more than 1mm) of fine sand or vermiculite. All eucalypts dealt with in this booklet germinate without any seed pre-treatment. At temperatures of 25°C, most seeds should germinate in 7 days. Germination trays should be kept in a shaded place.

When the seedlings have 2 to 3 pairs of leaves (including the cotyledon leaves) they should be transplanted. The seedling is gently lifted from the germination tray using a pointed tool (such as a small screw-driver) and planted in a hole approximately 3 cm deep and 1 cm in diameter and watered. Care must be taken to ensure that the roots are not curled (they can be pruned if too long). The potting mix should be free draining and have good water holding capacity. A successful mix is 1:1:1 of coarse sand, fine sand and peat moss with a little slow release fertiliser. Many types of containers can be used from plastic pots to tin cans (with holes in the bottom). At a temperature of 25°C, the seedlings should be ready for transplanting approximately 3 weeks after sowing. To avoid transplanting, an alternate means is to sow the seed directly into the seedling container and thin to a single seedling.

Young seedlings are very susceptible to fungal pathogens, such as 'damping off' and regular applications of a fungicide are recommended. Initially seedlings should be kept shaded and protected from frost. At 6 or 8 weeks of age, the young plants should be exposed to increasing amounts of sunlight until they are able to tolerate full sun. Too much shade will produce spindly and weak seedlings. Seedlings should be ready for planting approximately 3 to 4 months after sowing when they are 30 to 40 cm tall.

Due to unreliable rainfall, seedlings should be established with the aid of irrigation. This is maintained for a period of 6 to 24 months after planting, depending on rainfall. Drip irrigators with a flow rate of 4 litres per hour are normally used and the drip line turned on for two periods of approximately 4 hours each per week. As seedlings mature this can be changed to 1 period of 10 hours per week. For further details on drip irrigation see Sandell (1982).

The information given in the species accounts has been gathered from observations of plantings in urban areas which receive regular irrigation and from observations in remote areas where plantings receive irrigation only during initial establishment. All observations were made during the last ten years. During this period annual average rainfall was considerably above average. Although two non-consecutive years were relatively dry with averages of approximately 150 mm neither could be considered as true drought events.

For some eucalypts in the region there are virtually no growth trial data available and notes for these species are unfortunately lacking.

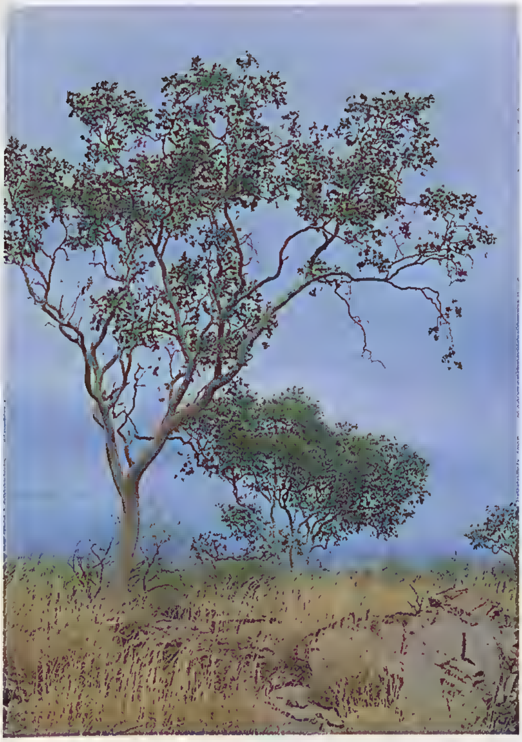


Plate 1. *E. aspera*

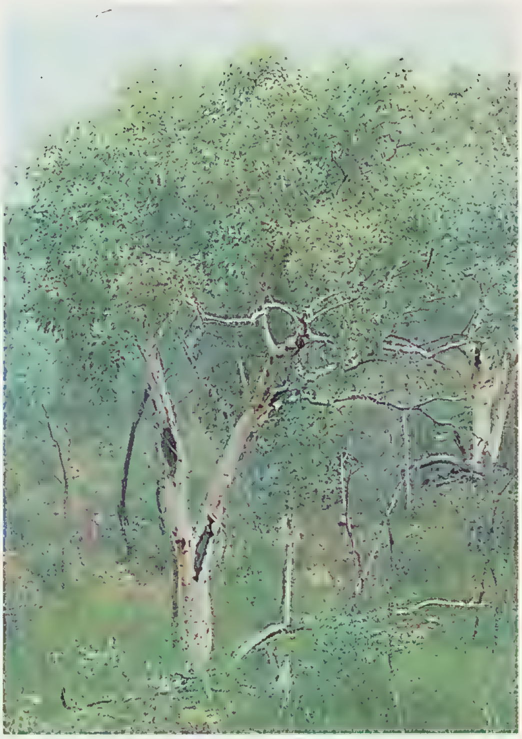


Plate 2. *E. brevifolia*

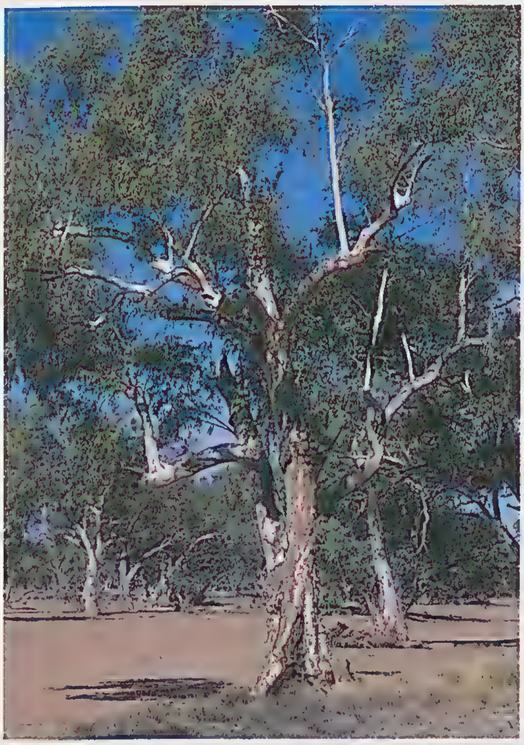


Plate 3. *E. camaldulensis*

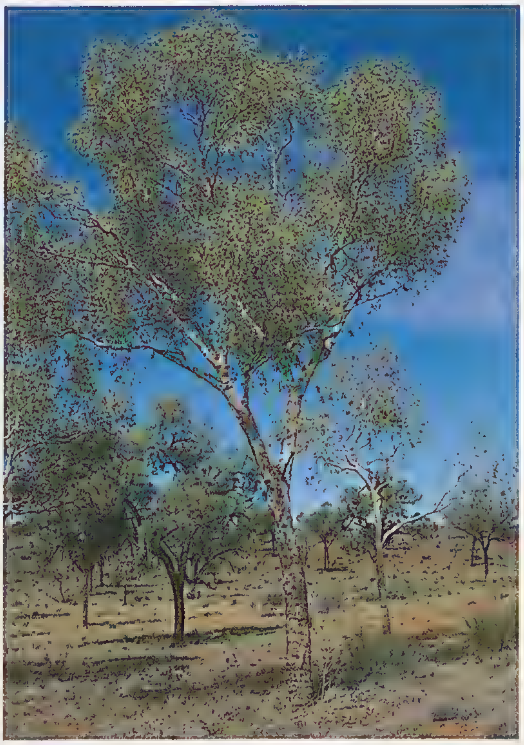


Plate 4. *E. chippendalei*

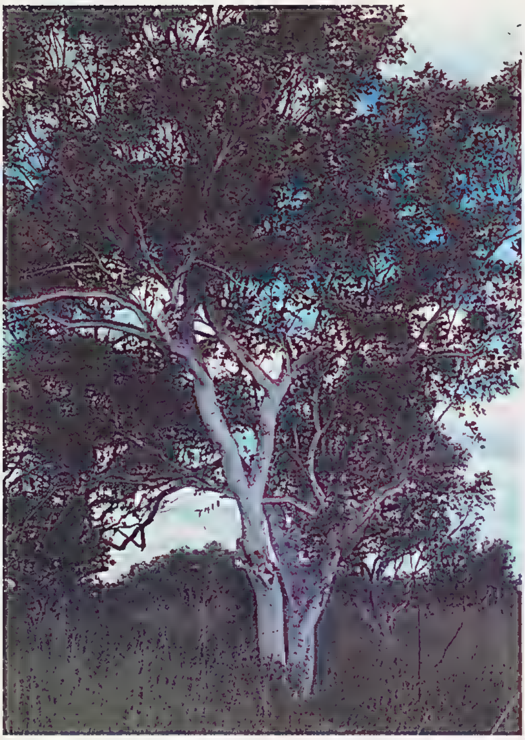


Plate.5. E. cupularis

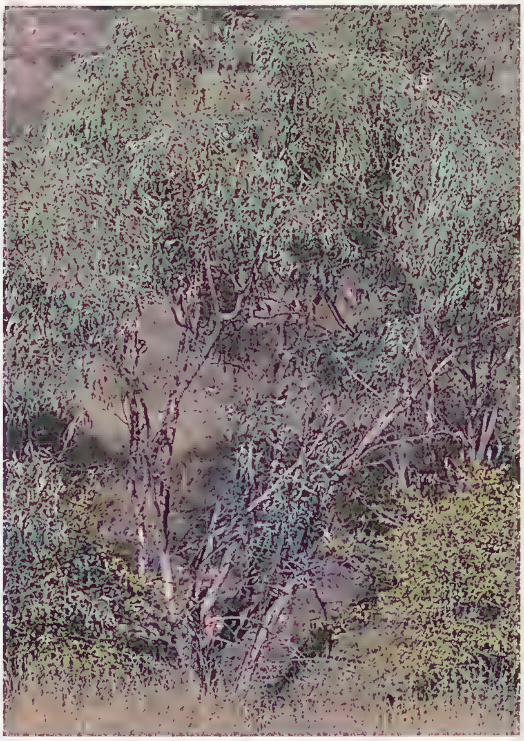


Plate 6. E. gillenii

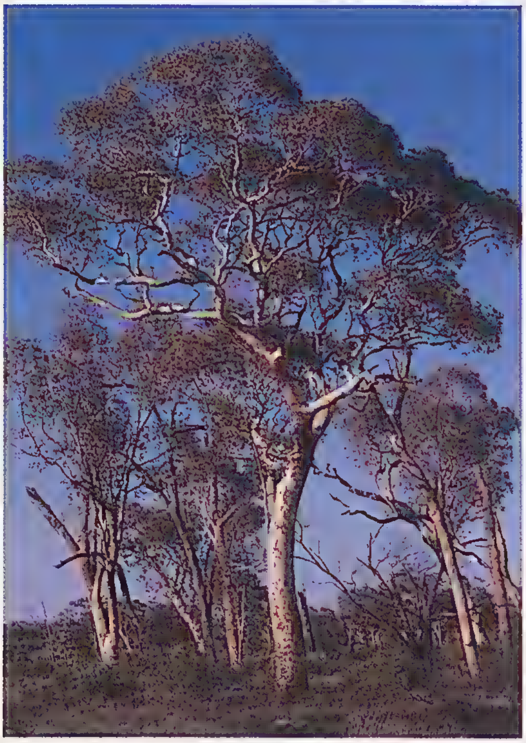


Plate 7. E. gongylocarpa

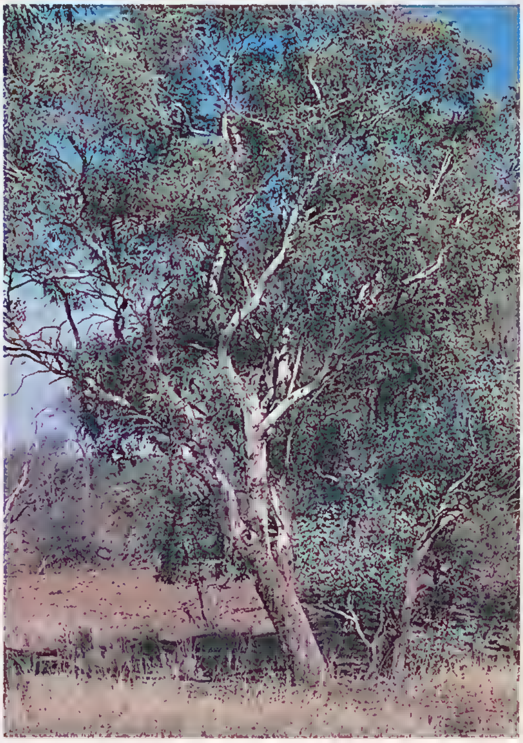


Plate 8. E. intertexta

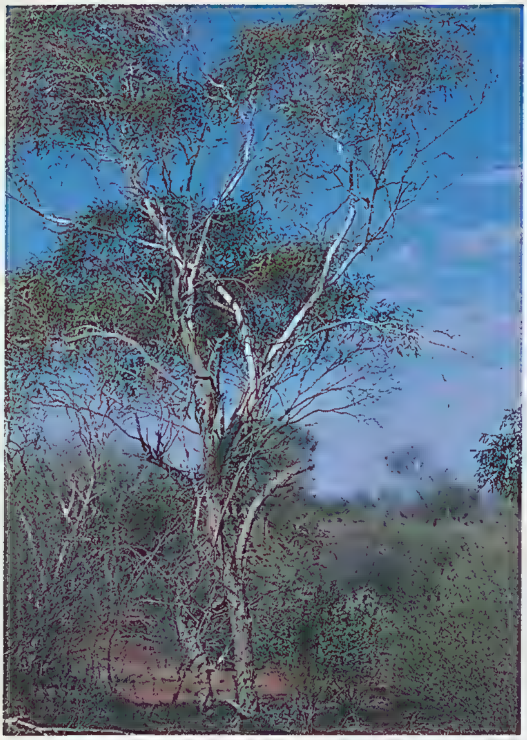


Plate 9. *E. mannensis*

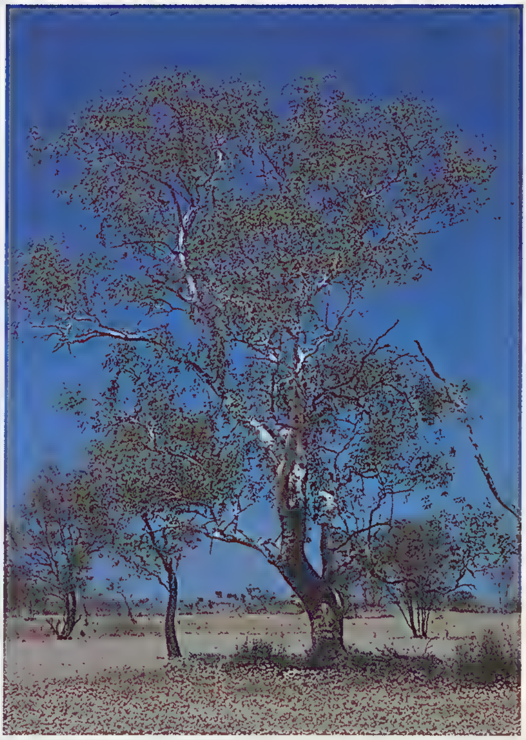


Plate 10. *E. microtheca*

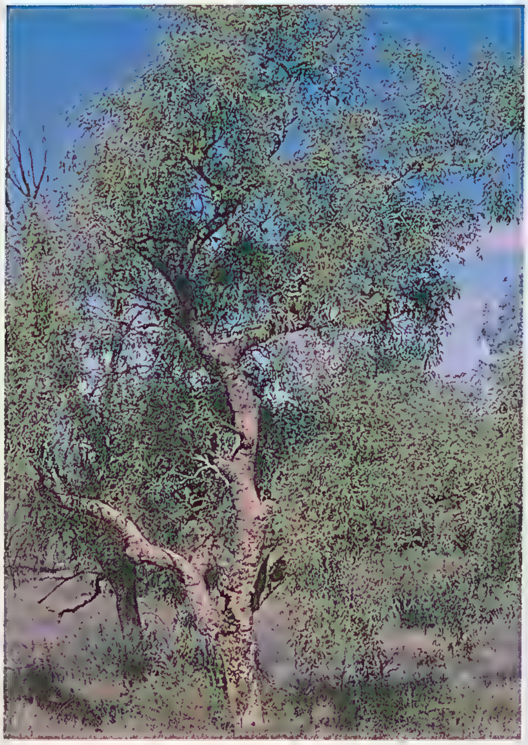


Plate 11. *E. opaca*

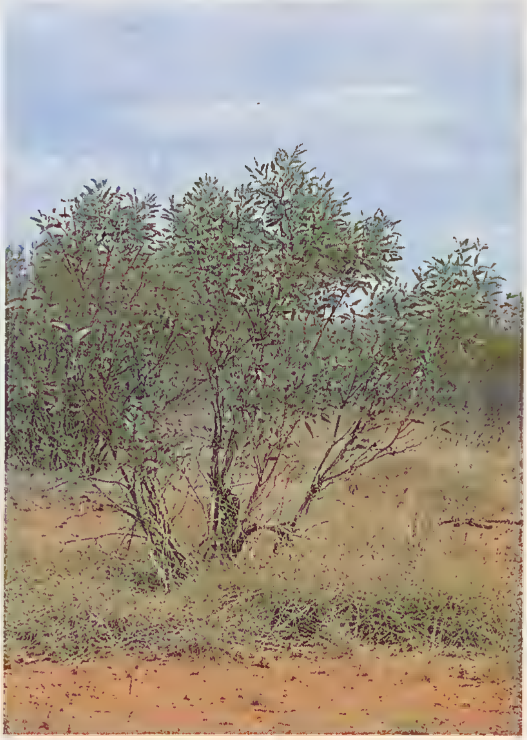


Plate 12. *E. pachyphylla*

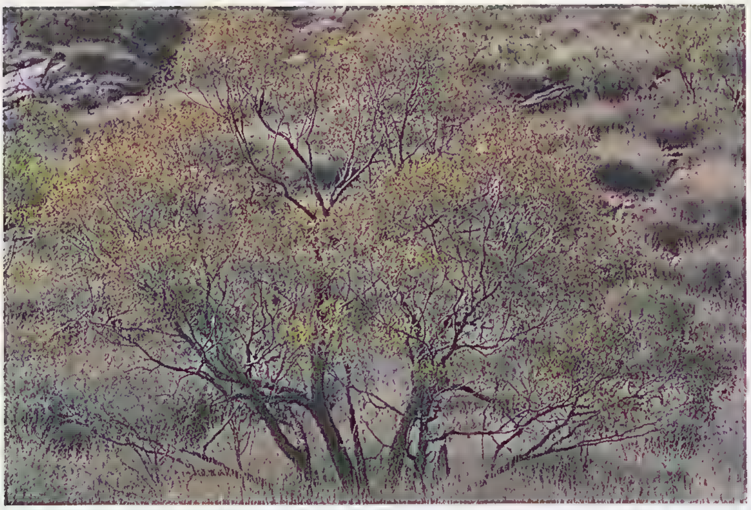


Plate 13. E. eremaea

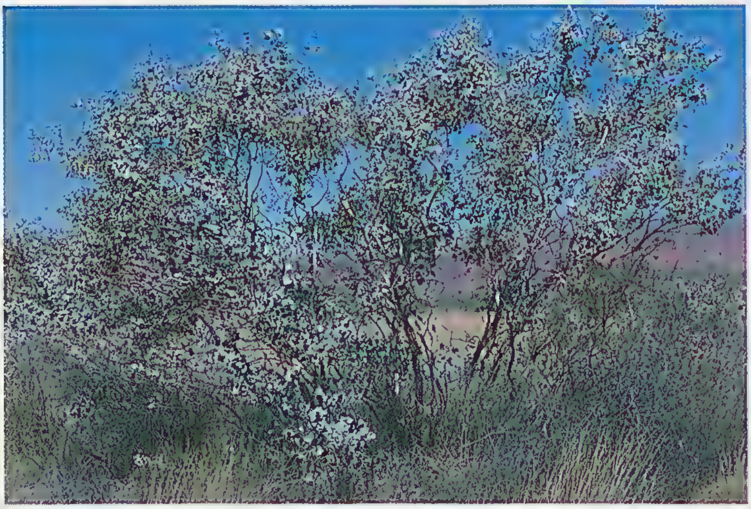


Plate 14. E. gamophylla

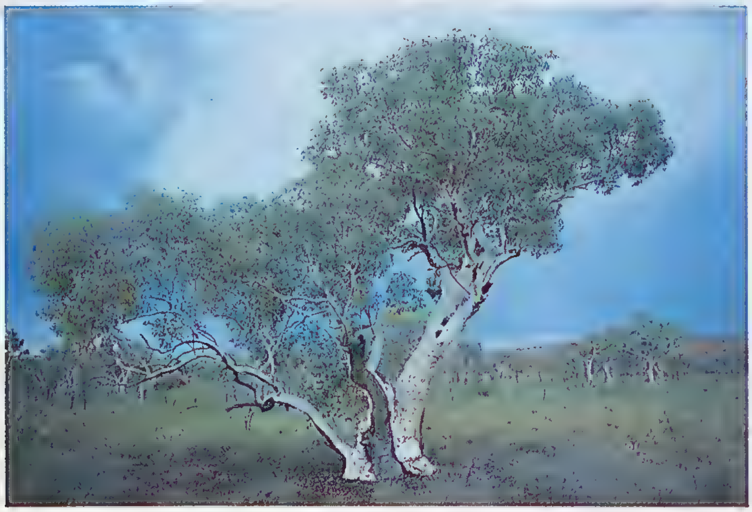


Plate 15. E. leucophloia

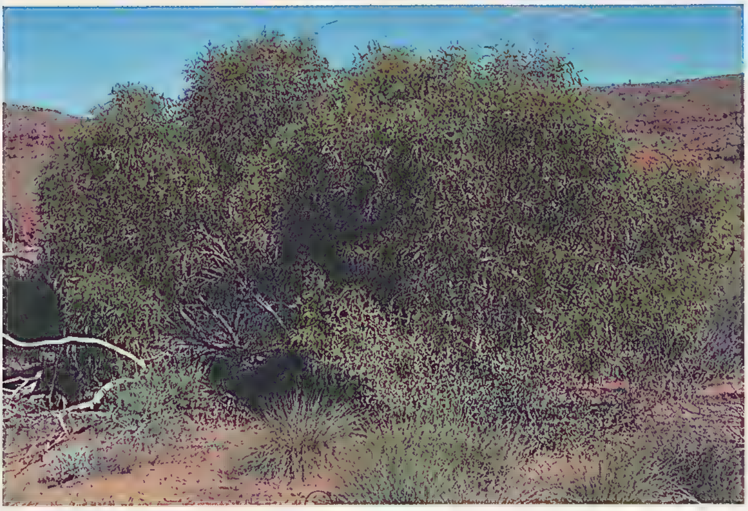


Plate 16. *E. luceus*

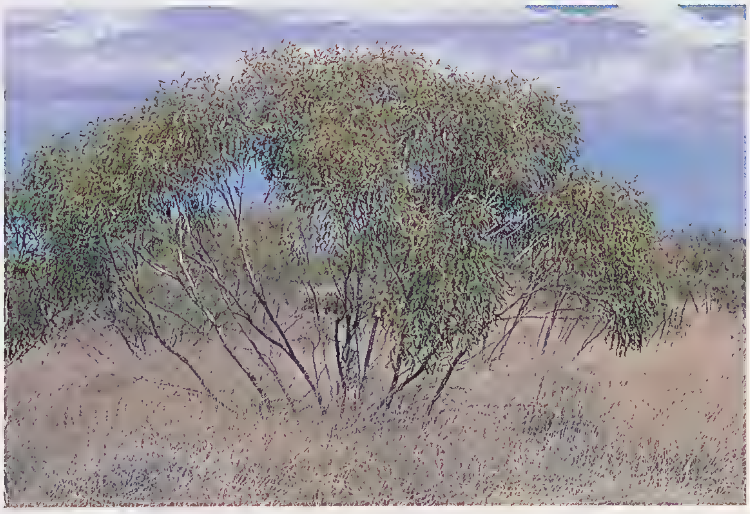


Plate 17. *E. normantonensis*

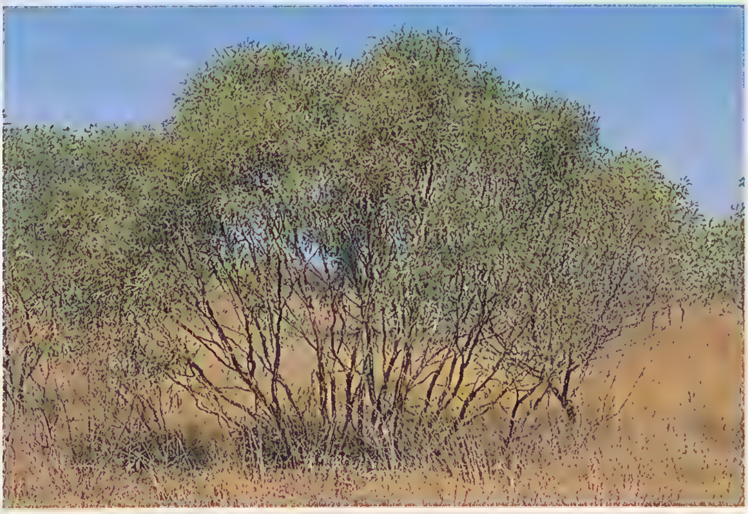


Plate 18. *E. odontocarpa*

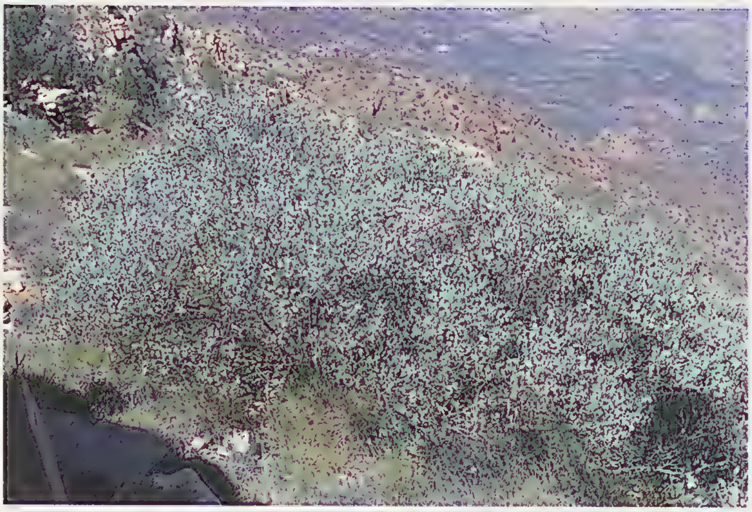


Plate 19. *E. orbifolia*

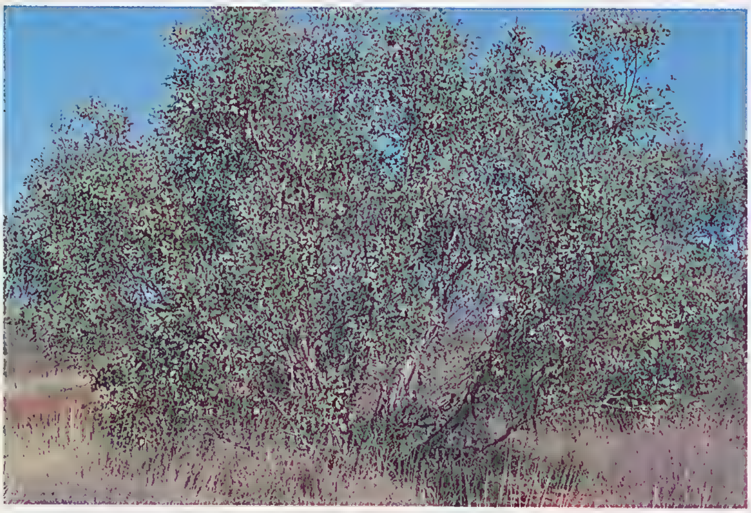


Plate 20. *E. oxymitra*

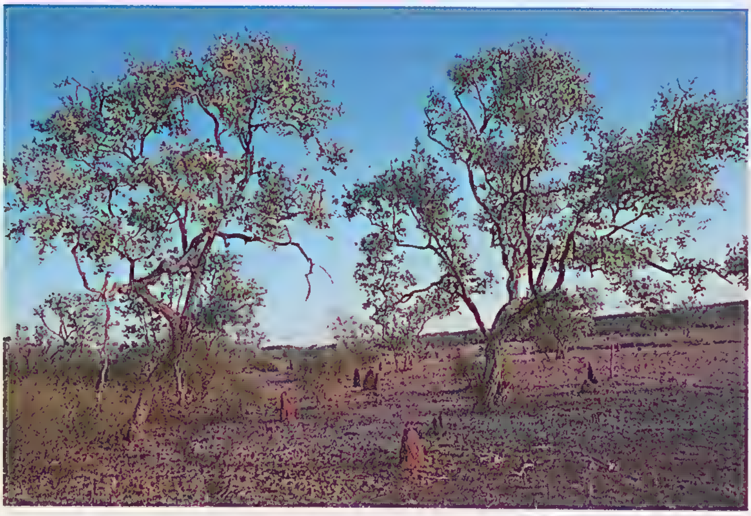


Plate 21. *E. pruinosa*

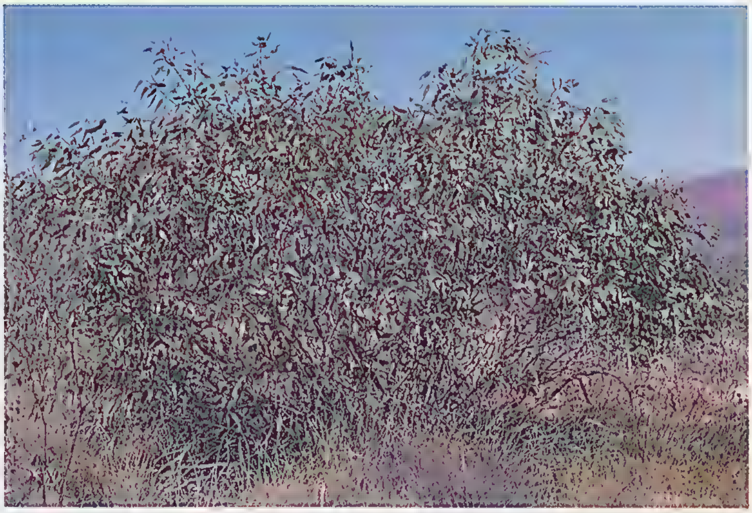


Plate 22. *E. sessilis*

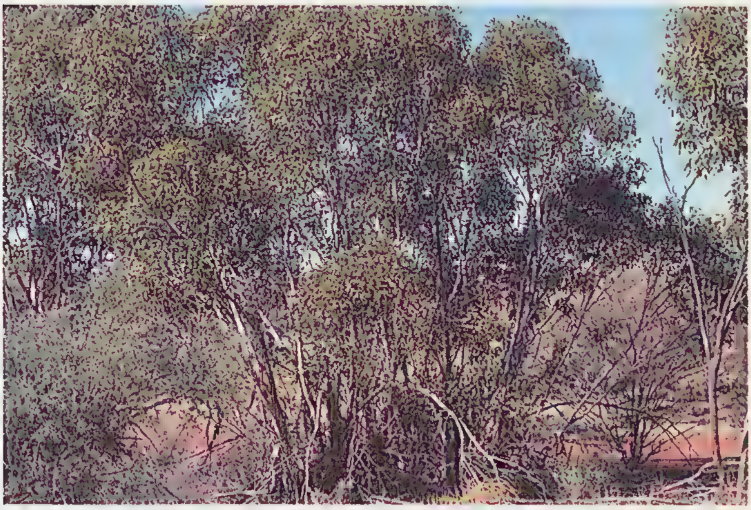


Plate 23. *E. sparsa*

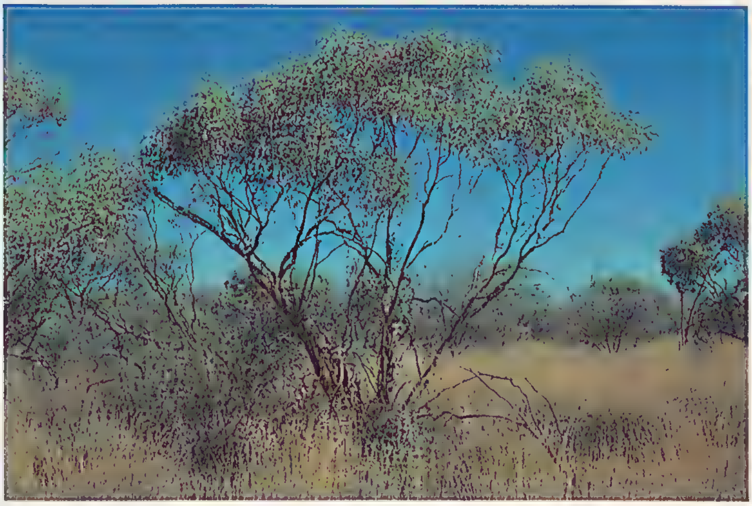


Plate 24. *E. trivalvis*

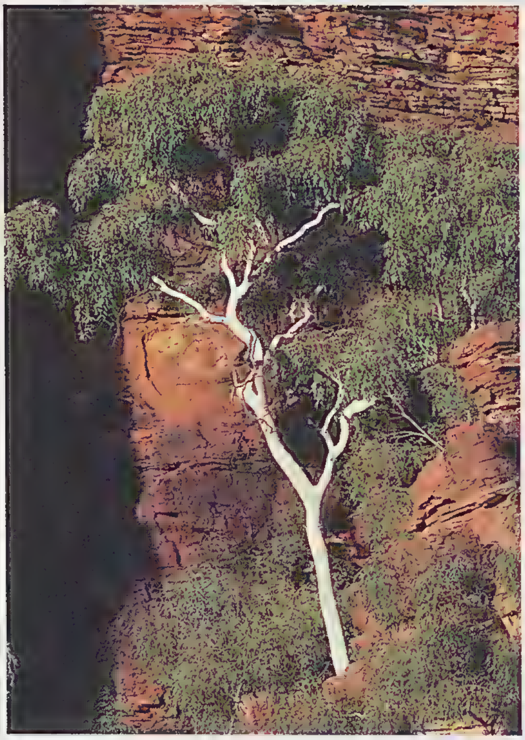


Plate 25. *E. papuana*

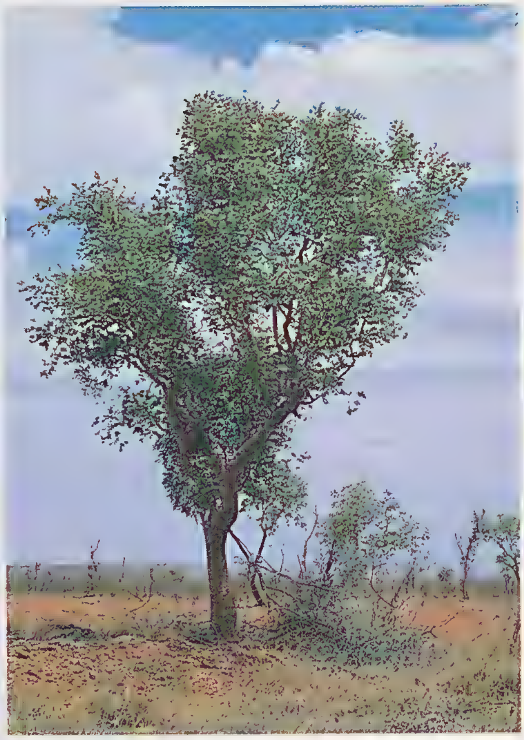


Plate 26. *E. setosa*

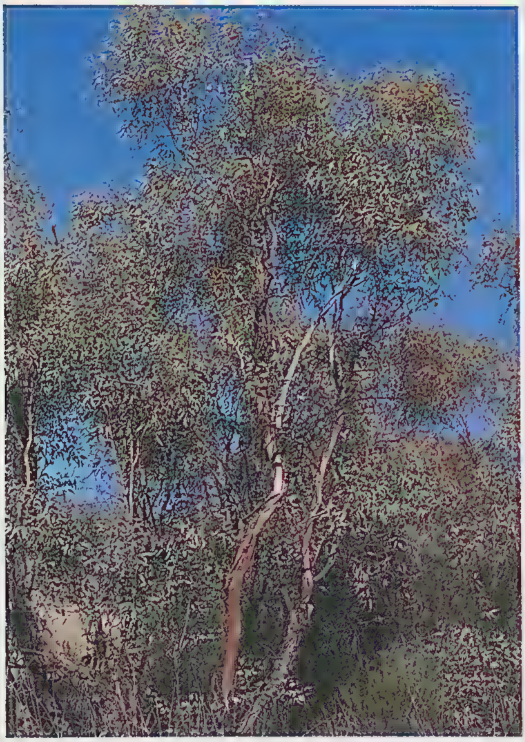


Plate 27. *E. socialis*

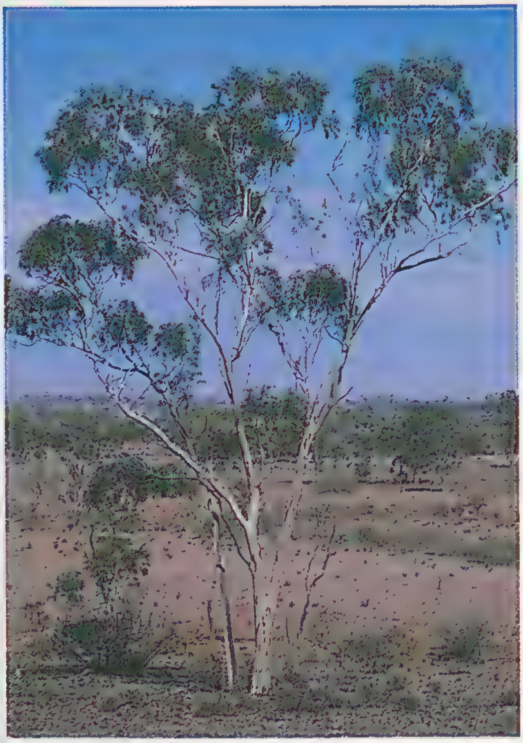


Plate 28. *E. thozetiana*

KEY TO THE EUCALYPTS OF THE ARID NT

1. Leaves opposite 2
1a. Leaves alternate 7

2. Leaves, buds and young fruits glaucous to pruinose 3
2a. Leaves not glaucous (may be rough or smooth to touch) 5

3. Fruit rounded, with constricted orifice, and thick woody walls .... *E. gongylocarpa*
3a. Fruit cup-shaped or conical, without constricted orifice or woody walls 4

4. Majority of fruits with 4 valves, sometimes 3 or 5, level with rim or exserted (Tennant Creek area) .... *E. pruinosa*
4a. Majority of fruits with 3 valves, sometimes 4, included .... *E. gamophylla*

5. Fruit greater than 9 mm diameter; leaves rough to the touch; smaller branches usually with erect brown hairs 37
5a. Fruit less than 9 mm in diameter; leaves rough or smooth, smaller branches without hairs 6

6. Valves exserted .... *E. leucophloia*
6a. Valves included 38

7. Leaves rounded, blue-green, 3 - 7 cm in diameter .... *E. orbifolia*
7a. Leaves not rounded, lanceolate to broad-lanceolate 8

8. Bark smooth over whole trunk or some rough bark shedding at the base of the trunk in small plates or from the upper branches and trunk in ribbons 15
8a. Bark rough and fibrous over most of the trunk, persistent or shedding in wavy textured fibrous segments, never in ribbons 9

9. Fruits woody, urn-shaped up to 30 mm long 10
9a. Fruits not urn-shaped 12

10. Fruit less than 20 mm long; small tree or mallee of rocky hill slopes .... *E. eremaea*
10a. Fruit greater than 20 mm long; small or large trees 11

11. Fruit as wide as long, pedicel 3 - 7 mm long; tree or mallee of dune crests .... *E. chippendalei*
11a. Fruit longer than wide, pedicel 5 - 17 mm long; tree of open plains and slopes .... *E. opaca*

12. Valves level with the rim or exserted .... *E. microtheca*
12a. Valves included 13

13. Leaves dull green; fruit 4 - 8 mm long .... *E. intertexta*
13a. Leaves glossy; fruit 3 - 6 mm long 14

14. Buds in groups of 3 - 7; fruits 3 - 4 mm diameter; peduncles 10 - 15 mm long, found north of the MacDonnell Ranges .... *E. normantonensis*

14a. Buds in groups of 7 - 11; fruits 4 - 6 mm diameter; peduncles 5 - 10 mm long, found in the Petermann area .... *E. sparsa*

15. Fruit greater than 10 mm in diameter 16
15a. Fruit less than or equal to 10 mm in diameter 18

16. Fruit less than 15 mm in diameter 35
16a. Fruit greater than 15 mm in diameter 17

17. Buds and fruits in threes; pedicels 3 - 6 mm long; mallee of open sand plains .... *E. pachyphylla*
17a. Buds and fruits 3 - 7; pedicel 0 - 2 mm long; mallee of rocky hill tops .... *E.sessilis*

18. Valves included 19
18a. Valves exserted or level with the rim 26

19. Leaves shiny 20
19a. Leaves dull 22

20. Leaves mostly less than 1 cm wide .... *E. thozetiana*
20a. Leaves mostly greater than 1 cm wide 21

21. Leaves 1 - 2 cm wide; fruit cone-shaped, found on upper slopes of central ranges .... *E. lucens*
21a. Leaves 1.5 - 3 cm wide; fruit cup-shaped, Petermann area .... *E. sparsa*

22. Leaves mostly less than 1 cm wide .... *E. thozetiana*
22a. Leaves mostly greater than 1 cm wide 23

23. Fruits sessile or on a short pedicel to 2 mm long 24
23a. Fruits on a pedicel 3 - 7 mm long 25

24. Fruit with 3 - 4 teeth on rim, buds in groups of 2 - 3, peduncle to 5 mm long .... *E. odontocarpa*
24a. Fruit without teeth on rim, buds in groups of 7 - 11, peduncles 3 - 15 mm long 36

25. Fruits with thin papery walls, can be crushed between fingers with a little effort, bark usually smooth white .... *E. papuana*
25a. Fruits woody, not easily crushed, bark grey or yellowish grey. .... *E. intertexta*

26. Fruit 2 - 4 mm long x 2 - 5 mm wide or if larger then fruit wider than long (including valves) .... *E. microtheca*
26a. Fruit larger than above, not wider than long (including valves) 27

27. Valves narrow, long and pointed in young fruits, (breaking off in older fruits), bud cap (operculum) long and pointed .... *E. socialis*
27a. Valves triangular to broad triangular, operculum short, blunt 28

28. Leaves shiny .... *E. mannensis*
28a. Leaves dull 29

29. Disc prominent, convex or flat 30
29a. Disc obscure, sunken below level of the rim 31

30. Fruits and buds sessile or with pedicel to 2 mm long 32
30a. Fruits and buds with pedicel 2 - 12 mm long 33

31. Mallee with reddish, smooth, brown or pink bark .... *E. trivalvis*
31a. Mallee or small tree with smooth white powdery bark .... *E. leucophloia*

32. Buds with the cap (operculum) 2 - 4 mm long, shorter than the body of the bud (hypanthium); leaves 5 - 12 cm long x 2 - 5 cm wide .... *E. brevifolia*
32a. Buds with the cap (operculum) 5 - 7 mm long, equal in length to the body of the bud (hypanthium); leaves 8 - 22 cm long x 2.5 - 6 cm wide .... *E.cupularis*

33. Majority of fruits with 3 valves, occasionally 4 .... *E. brevifolia*
33a. Majority of fruits with 4 valves, occasionally 3 or 5 34

34. Most often a mallee, sometimes a small tree; fruits 8 - 10 mm long and 7 - 10 mm wide; often on rocky hills .... *E. gillenii*
34a. Tree; fruits 5 - 8 mm long and 5 - 8 mm wide; common in watercourses .... *E. camaldulensis*

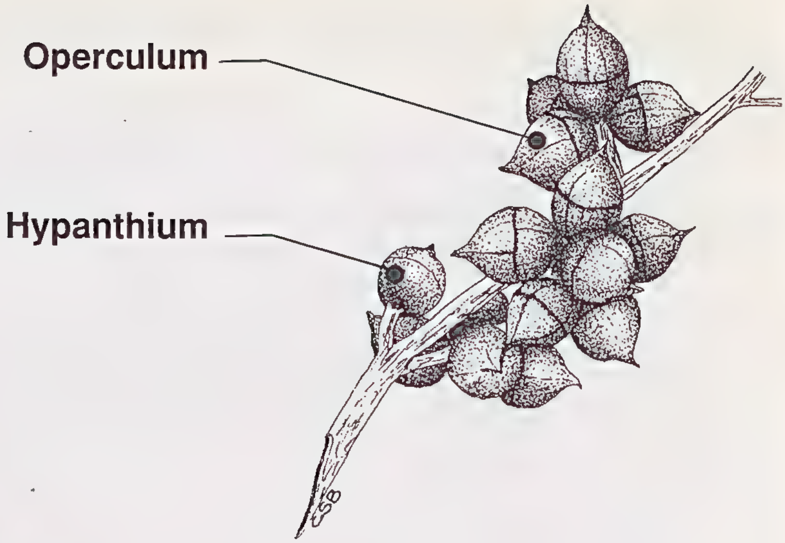
35. Fruits 12 - 20 mm long x 10 - 15 mm wide .... *E. oxymitra*
35a. Fruits 8 - 10 mm long x 7 - 10 mm wide .... *E. gillenii*

36. Fruit disc prominent, broad, convex or flat; peduncles 3 - 6 mm long .... *E. brevifolia*
36a Fruit disc obscure, below level of rim; peduncles 5 - 15 mm long .... *E. trivalvis*

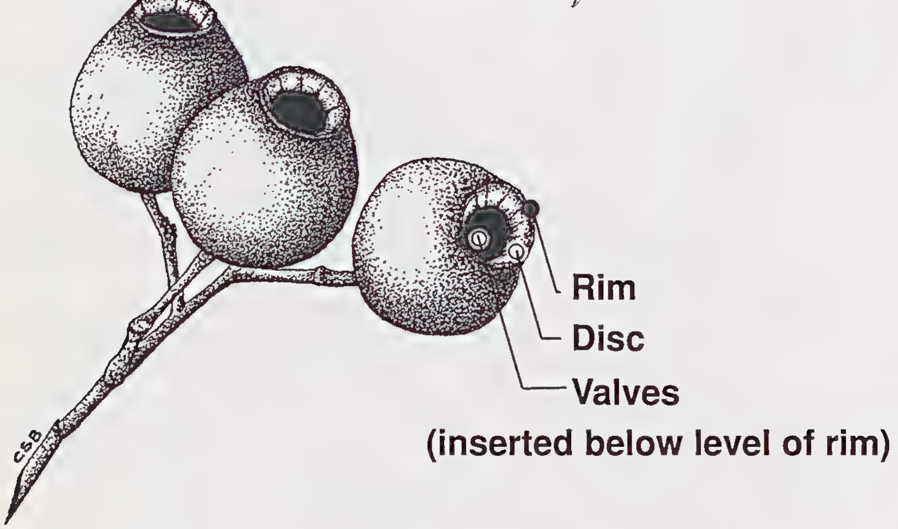
37. Fruits 11 - 16 mm long x 10 - 15 mm wide .... *E. deserticola*
37a. Fruits 20 - 30 mm long x 20 - 30 mm wide .... *E. setosa*

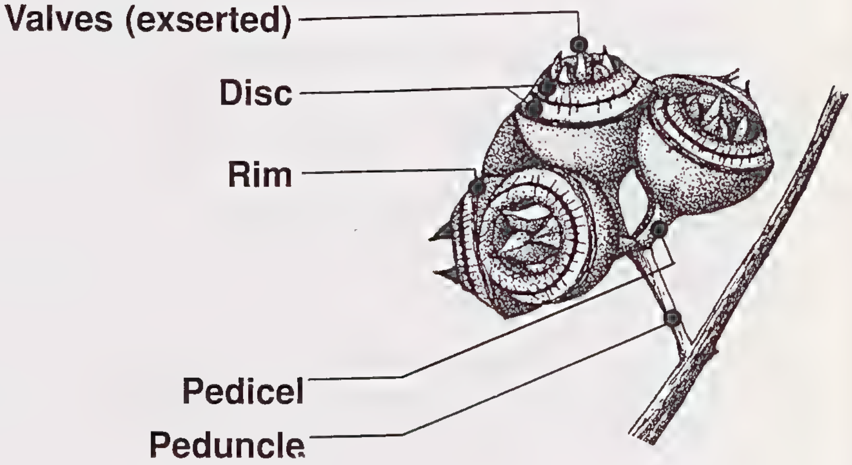
38. Leaves rough to touch, 4 - 5 cm long .... *E. aspera*
38a. Leaves smooth, 7 - 12 cm long. .... *E. odontocarpa*

BUDS


Operculum
Hypanthium
CSB

FRUITS


Rim
Disc
Valves
(inserted below level of rim)
CSB


Valves (exserted)
Disc
Rim
Pedicel
Peduncle

GLOSSARY

Alternate leaves	leaves at different levels on opposite sides of the stem
Campanulate	bell-shaped
Conical	cone-shaped
Convex	rounded outwards
Cupular	cup-shaped
Cylindrical	cylinder-shaped
Depressed	flattened
Discolorous	(with reference to leaves): - the upper and lower surfaces noticeably different in colour
Disjunct	broken up
Fissured	thick and fibrous with wide furrows (bark)
Glaucous	a waxy covering, usually white, pale blue or grey-green
Globular	globe or ball-shaped
Hemispherical	half-ball shaped
Lanceolate	lance-shaped
Laterite	a type of gravelly or stony soil, the gravel rounded and dark red or black
Mallee	with several small trunks arising from ground level
Obtuse	blunt or rounded (normally at the apex)
Operculum	the cap on the bud
Opposite leaves	leaves arising from the same level on opposite sides of the stem
Orbicular	a circular shape (of a leaf)
Ovate	oval shaped, broadest in the lower half
Ovoid	egg shaped (of a fruit or bud)
Pedicel	the stalk of a single fruit, flower or bud
Peduncle	the stalk of the fruit, flower or bud cluster
Pruinose	a white thick frost-like covering
Pyriform	pear-shaped
Rim	the lip of the fruit capsule
Sessile	without a stalk. Fruits: without a pedicel
Terminal Flowers	flowers at the end of the branches
Tessellated	a pattern similar to that formed by square paving stones
Truncate	cut-off
Turbinate	shaped like a top
Umbel	a cluster of buds, flowers or fruits with their stalks joined together at the base
Valves	exserted valves protruding above the level of the rim of the fruit
Valves level	valves level with the rim of the fruit
Valves included	valves that are below the level of the rim (sometimes hard to locate).

E. aspera

Names

Both the species and common names refer to the rough leaves and stems.

Description

A small, straggly tree to 12 m, or sometimes taking on a mallee appearance with several trunks to 3 m tall.

Bark	smooth and ashy-white, sometimes rough and tessellated at the base.
Leaves	opposite, sessile, crowded along the stems, rough, grey or glaucous, oblong to lanceolate in shape, 4 - 5 cm long.
Buds and flowers	in umbels of 3 - 6.
Operculum	hemispherical.
Pedicels	3 - 7 mm.
Peduncles	0.
Fruit	ovoid-truncate, thin-walled, 5 - 10 mm long and 4 - 9 mm in diameter.
Valves	included.
Flowers	from October to January.

Identification

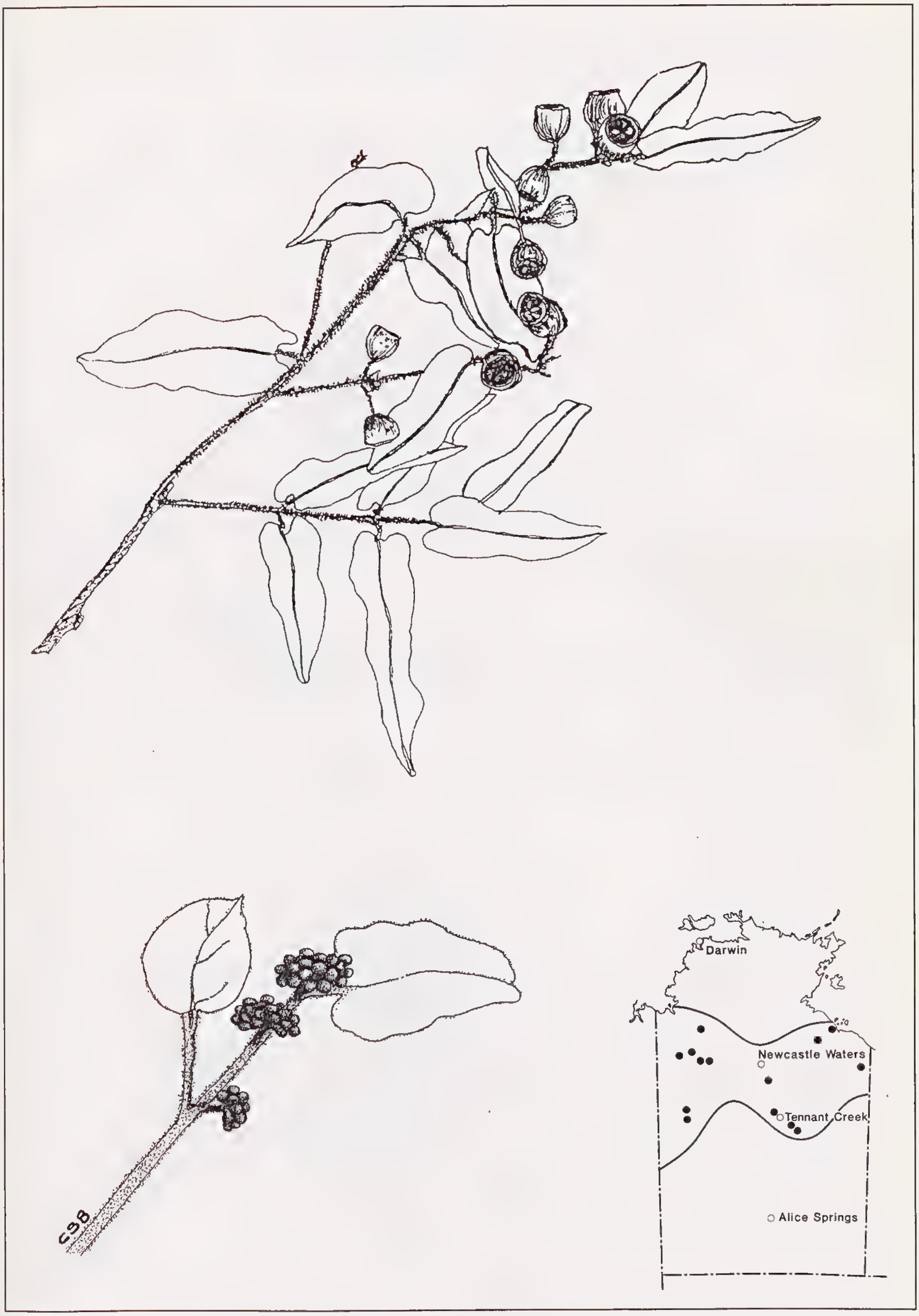
This species' small, rough, opposite leaves and papery fruits (which are easily crushed between the fingers) serve to distinguish it from other southern NT eucalypts.

Habitat and Distribution

Found in sandstone or quartzite outcrops, rarely in deep red sand. Extends from WA across the northern part of the NT into Qld.

See Plate 1. Page 7.

Rough-leaved Range Gum



E. brevifolia F. Muell.

Names

The species name refers to the short leaves and the common name to the way the brittle branches snap off easily leaving a clean break.

Description

A small, crooked-growing tree which sometimes takes on a mallee form, up to 10m high.

Bark	smooth, white.
Leaves	alternate, dull green, oblong to lanceolate, 5 - 16 cm long.
Buds and flowers	in umbels of 4 - 6.
Operculum	obtuse hemispherical.
Pedicels	to 2 mm.
Peduncles	3 - 6 mm.
Fruit	ovoid-truncate, 5 - 8 mm long x 4 - 7 mm in diameter.
Valves	exserted, with a broad, flat or slightly concave disc.
Flowering	March to August.

Identification

Within its NT distribution, this species is most easily confused with *E. cupularis*, *E. camaldulensis* and the smooth barked variety of *E. microtheca*. It is distinguished from *E. camaldulensis* and *E. microtheca* by its tightly clustered buds and fruits (pedicels to 2 mm long) and from *E. cupularis* by its shorter peduncles and more rounded buds.

Habitat and Distribution

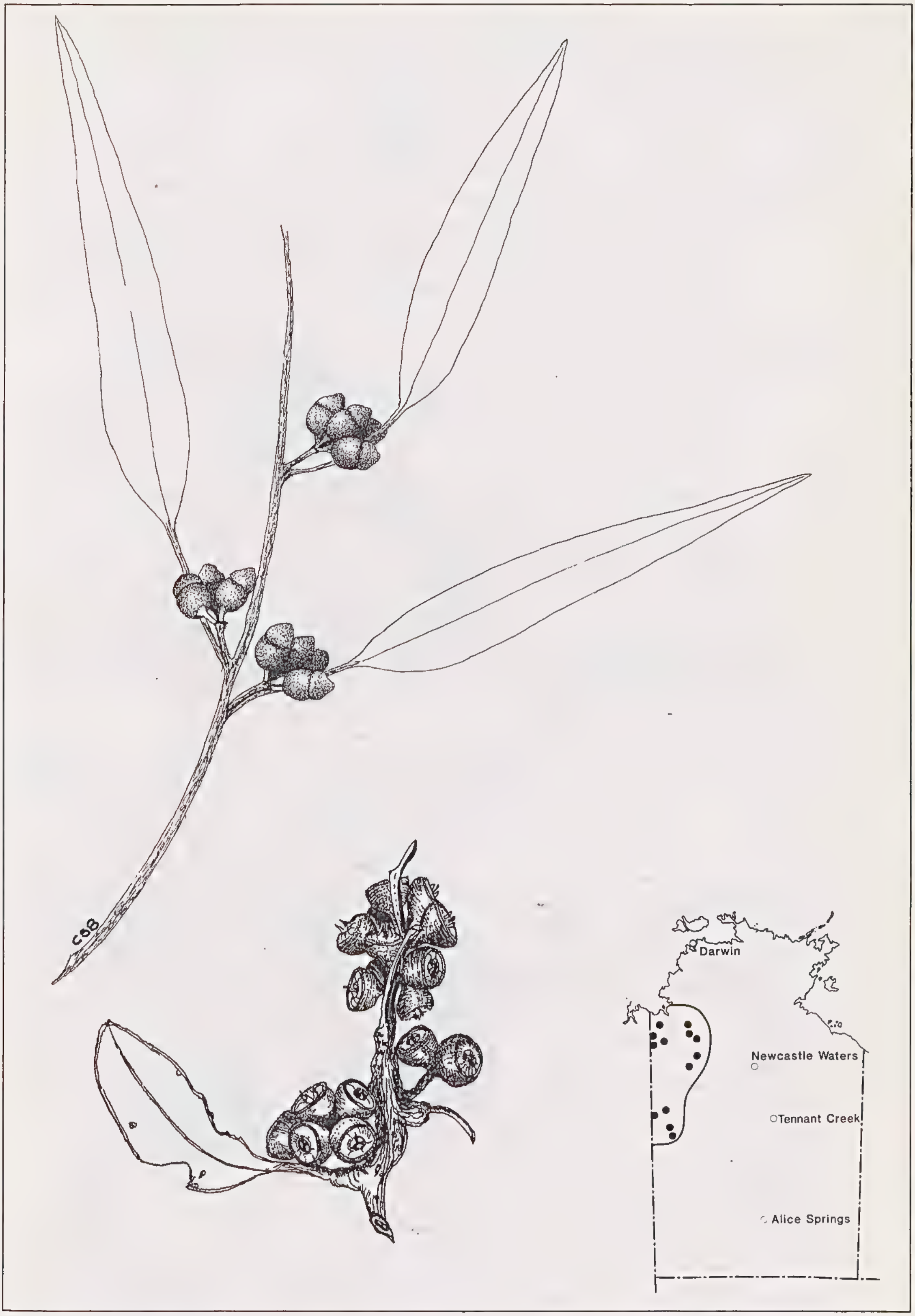
Rocky sandstone ridges and gravelly slopes, rarely in red sand. Found only in the far north-west of the central NT and also occurring in WA.

Propagation

Attempts to establish this species at Alice Springs have failed due to its low frost tolerance.

See Plate 2. Page 7.

Snappy Gum



E. camaldulensis Dehnh.

Names

This species was named from a cultivated specimen growing in the Camalduli Gardens above Naples (Italy). The common name refers to the dark red colour of the timber and the fact that it is found growing along rivers and watercourses.

Description

A tree reaching 20 m in height, with a large spreading crown supported on a robust dull-coloured trunk with a few thick curved and often crooked branches.

Bark	smooth and dappled, off-white, red or grey, occasionally a little rough bark can be found at the base.
Leaves	alternate, dull green to blue-green, narrow-lanceolate to lanceolate, 7 - 30 cm long.
Buds and flowers	in umbels of 5 - 12.
Operculum	hemispherical to ovoid (in Victorian specimens the operculum is very pointed).
Pedicels	5 - 12 mm.
Peduncles	6 – 16 mm.
Fruit	hemispherical to ovoid, 5 - 8 mm long x 5 - 8 mm in diameter
Valves	triangular, exserted.
Flowers	from July to October.

Identification

This species may be confused with a number of other smooth barked gums, but may be distinguished by the red and grey blotches often found on the trunk. Buds and flowers may be in groups of up to 11. It is nearly always found in sandy soils along watercourses or on floodout plains.

Habitat and Distribution

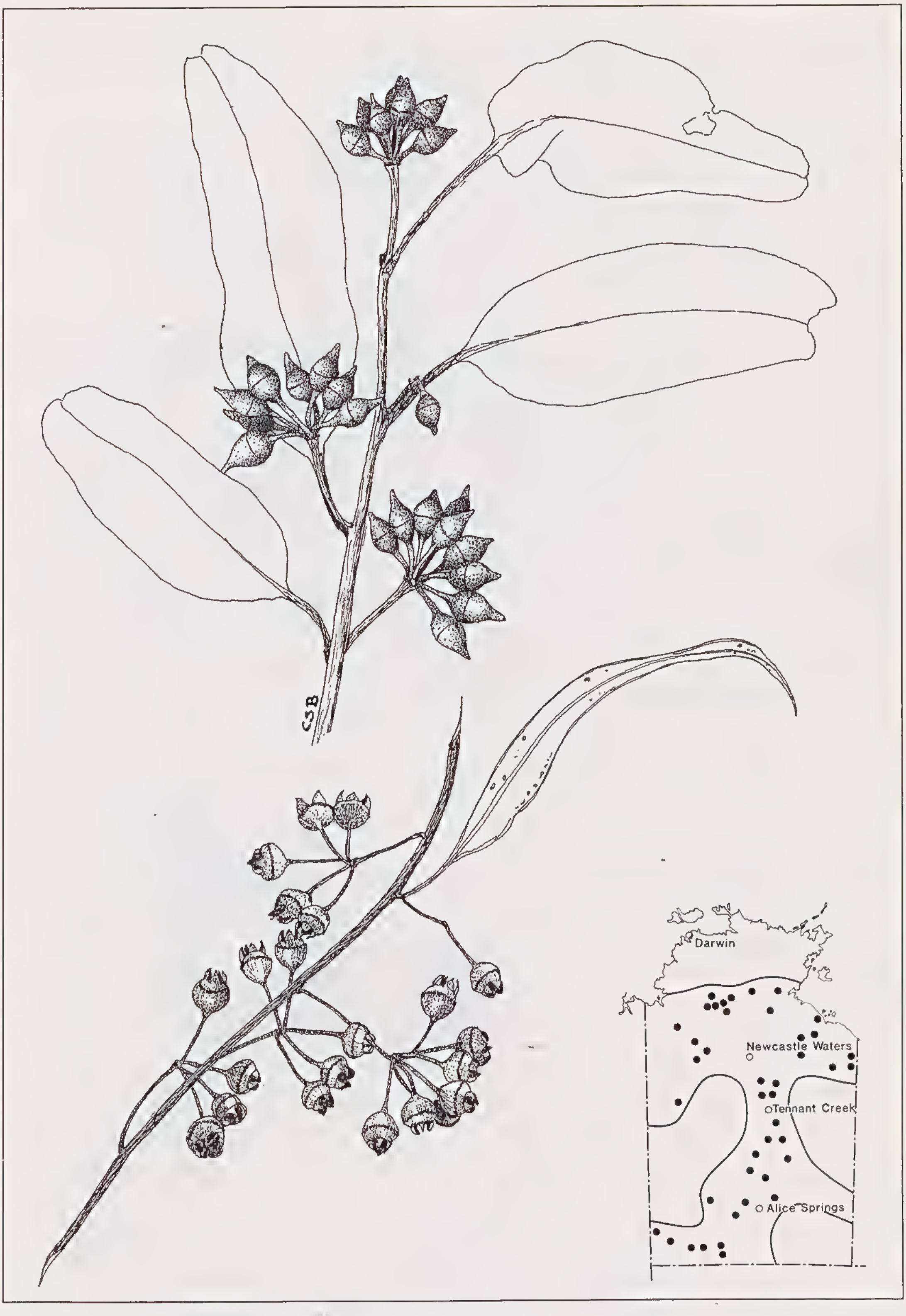
This species is the most widely distributed of all eucalypts, and is found on major water ways throughout the mainland, except for southern WA, the SA coast adjoining WA, and the coastal fringe of Qld, NSW and Vic.

Propagation

This species will tolerate a wide range of climatic and soil conditions and is frost tolerant. *E. camaldulensis* requires a good water supply and normally occurs where the ground water is close to the surface or where it receives a lot of run-off. It is useful for shade or as an ornamental, but its suitability as a garden or street tree is limited because of its tendency to drop large branches. Growth rates of 3 m per year can be achieved for at least 5 years.

See Plate 3. Page 7.

River Red Gum



E. chippendalei D. Carr & S. Carr

Name

This species is named after Mr George Chippendale, a botanist who pioneered botanical research in the NT. The common name refers to the habitat in which this species is normally found.

Description

A tree or sometimes a mallee to 8 m tall.

Bark	fibrous, shed from the smaller branches or occasionally the whole trunk to leave a creamy-white smooth surface.
Leaves	lanceolate to narrow lanceolate, 7 - 13 cm long, 2 - 15 cm wide.
Buds and flowers	in clusters of 3 - 7.
Pedicels	3 - 7 mm.
Peduncles	8 - 20 mm.
Fruit	large and rounded, woody, 18 - 30 mm long and 17 - 25 mm in diameter.
Valves	deeply included.
Flowers	September to May.

Identification

This species' large woody fruits with included valves and its preference for sand dune habitats serve to distinguish it from other eucalypts in the southern NT.

Habitat and Distribution

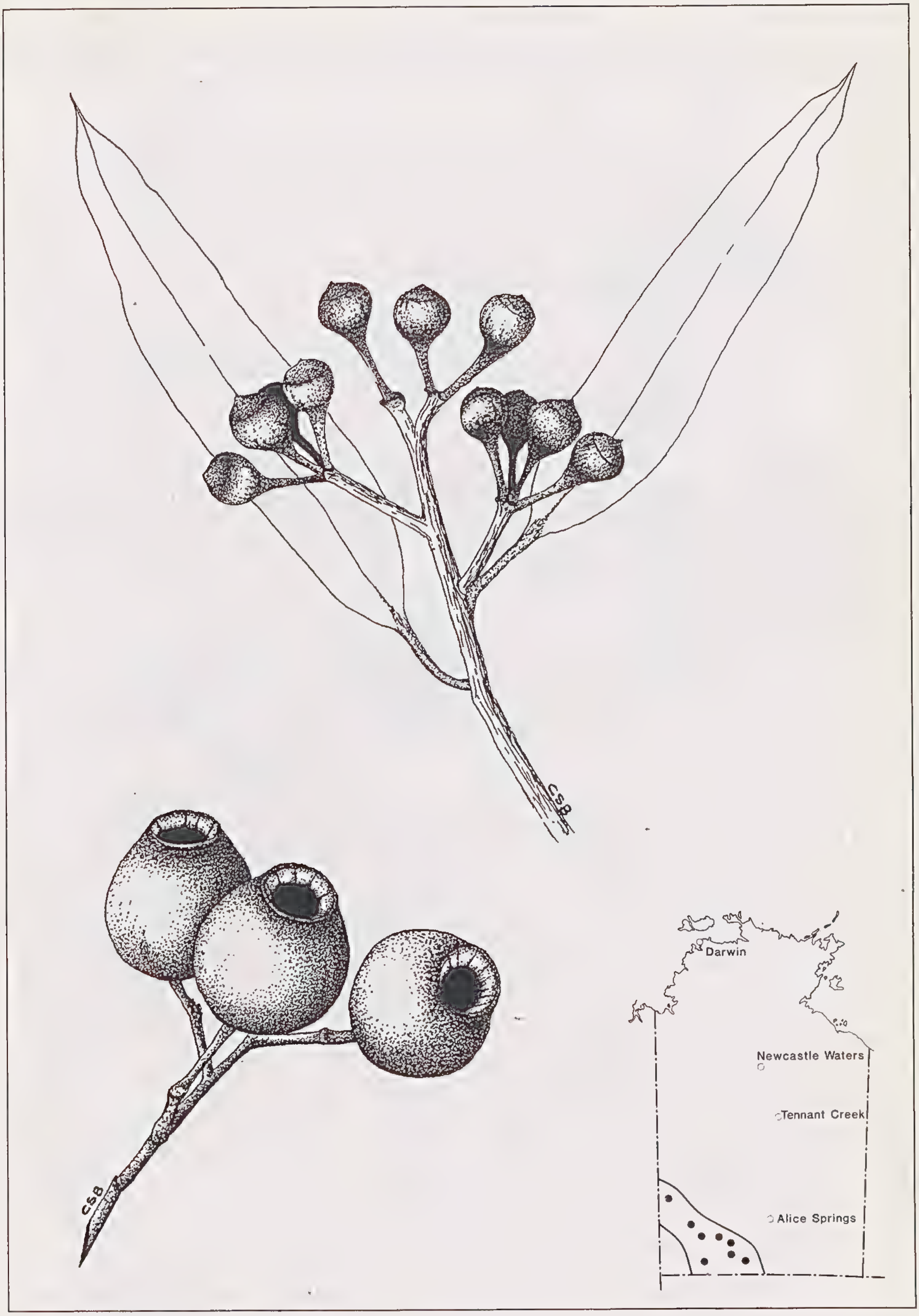
Found in the south-western portion of the NT in sandy areas, normally on the crests and flanks of sand dunes.

Propagation

This species has been cultivated on sandy soils at Yulara.

See Plate 4. Page 7.

Sandhill Bloodwood



E. cupularis C. Gardner

Name

The species name refers to the cup-shaped fruits, while the common name refers to the bark colour and also to Halls Creek, an area in which it commonly occurs.

Description

Tree to 12 m tall.

Bark	smooth, white or creamy. Sometimes ribbons of bark persisting at the base.
Leaves	lanceolate, 8 - 20 cm long.
Buds and flowers	in umbels of 7.
Operculum	conical, blunt or slightly pointed;
Pedicels	0.
Peduncles	10 - 15 mm.
Fruit	cupular, 6 - 9 mm long and 6 - 8 mm in diameter, disc flat or convex.
Valves	narrow, strongly exserted.
Flowers	from November to February.

Identification

Within its restricted NT distribution, this species is most easily confused with *E. camaldulensis*, *E. brevifolia* and the smooth barked variety of *E. microtheca*. It may be distinguished from *E. camaldulensis* and *E. microtheca* by its tightly clustered (sessile) buds and fruits, and from *E. brevifolia* by its longer peduncles and more elongated buds.

Habitat and Distribution

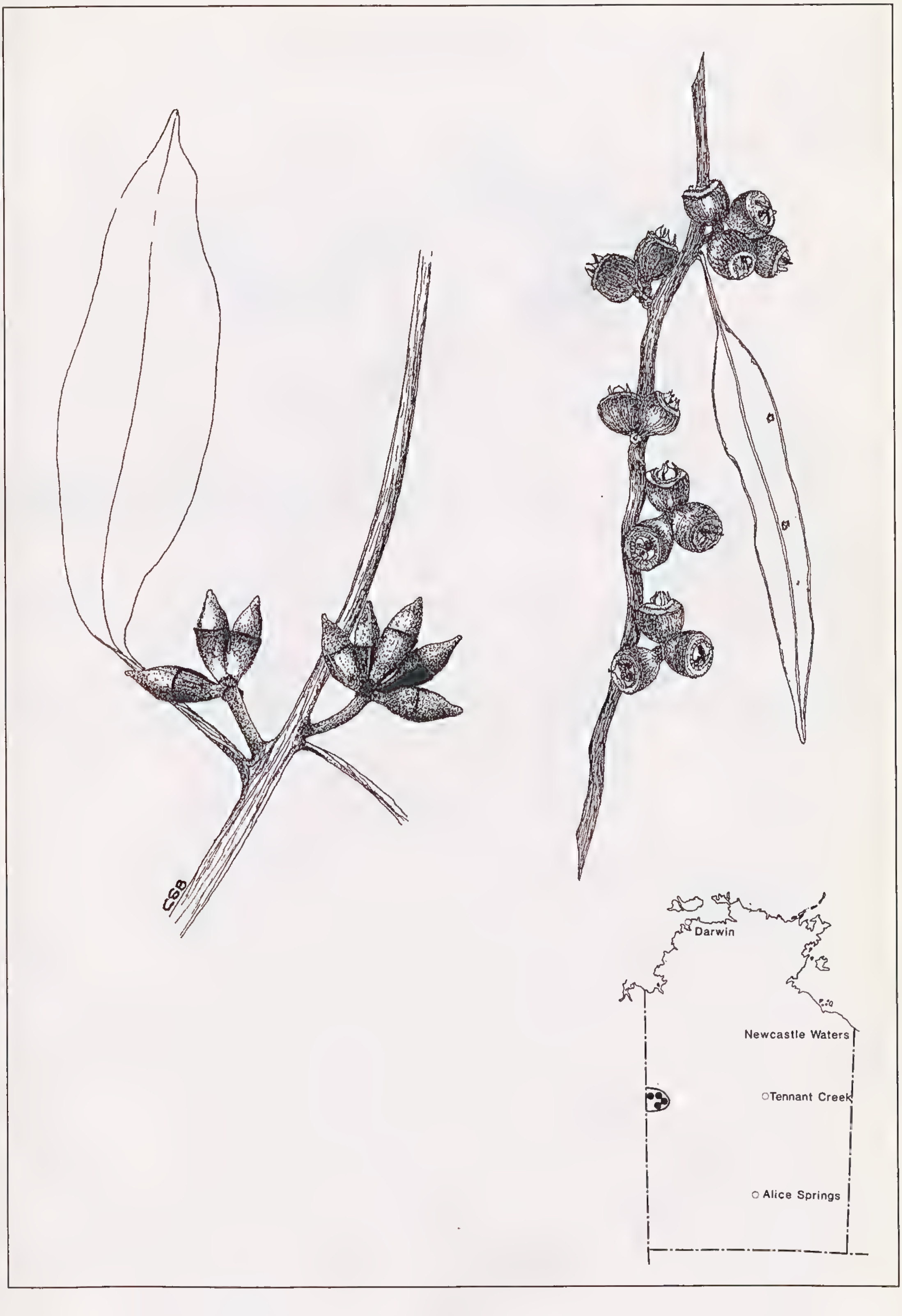
Found in the NT in the western Tanami Desert where it grows in sandy soil along seasonal streams.

Notes

Although not used extensively as an ornamental species it is probably an ideal street tree for frost free urban regions.

See Plate 5. Page 8.

Halls Creek White Gum



E. deserticola D. Carr & S. Carr

Name

The species name refers to the desert habitat in which it is normally found. There is no known common name.

Description

Tree to 6 m tall.

Bark	rough, flaky, persistent on the trunk and branches.
Leaves	opposite, rough to the touch, ovate to ovate-lanceolate, 1.5 - 4 cm long, 1 - 2 cm wide. Young leaves often discolorous.
Pedicels	c. 1.7 mm.
Peduncles	6 - 12 mm.
Fruit	woody, urn-shaped, 11 - 16 mm long, 10 - 15 mm in diameter.
Valves	deeply included.
Flowers	Only one flowering specimen is held in the NT Herbarium and was collected in November.

Identification

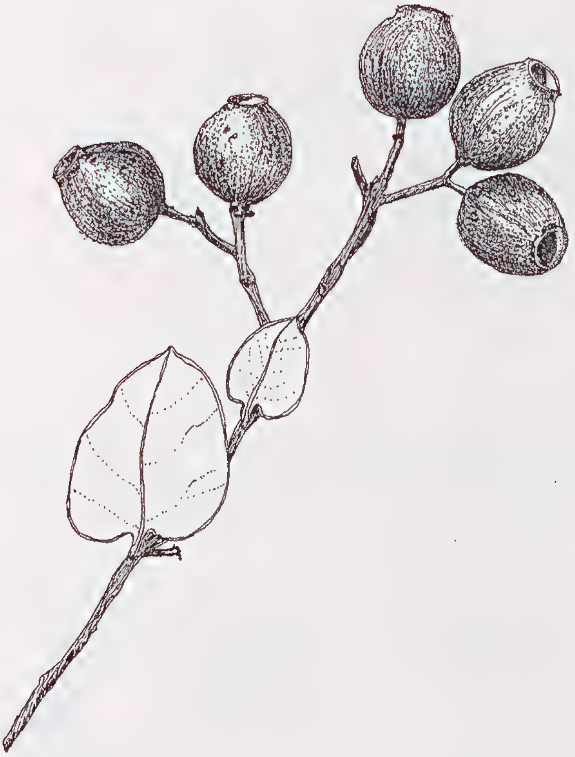
The rough, opposite leaves and large, rounded fruits serve to distinguish this species from most other eucalypts occurring in central Australia. It may, however, be confused with *E. setosa* which has larger fruits and generally larger leaves.

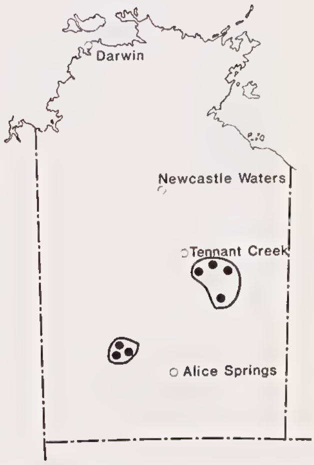
Habitat and Distribution

Found in two localities in the NT: near Mt Wedge on rocky hill slopes and in the Epenarra, Kurundi area on open rocky ridges and adjoining sand plains.

Notes

This species was described in 1985 and was previously included (at least in NT botanical collections) under *E. setosa*.




Darwin
Newcastle Waters
Tennant Creek
Alice Springs

E. eremaea D. Carr & S. Carr

Name

The species name refers to the arid areas in which it is found, while the common name refers to the species growth habit.

Description

A mallee 2 - 4 m tall or sometimes a stunted spreading tree to 5 m.

Bark	rough fibrous, persistent on the trunk and outer branches.
Leaves	alternate, lanceolate to 10 cm long.
Buds and flowers	in umbels of 7 or less.
Operculum	blunt or shortly pointed.
Pedicels	3 - 4 mm.
Peduncles	5 - 7 mm.
Fruit	ovoid-urceolate (urn-shaped) 10 - 16 mm long and 7 - 15 mm in diameter.
Valves	deeply included.
Flowers	August to December.

Identification

This species may be distinguished by its rough, persistent bark, urn-shaped bloodwood fruits and alternate leaves. Other species with similar characters are *E. opaca* and *E. chippendalei* although the fruits of both these species are larger than those of *E. eremaea*.

Habitat and Distribution

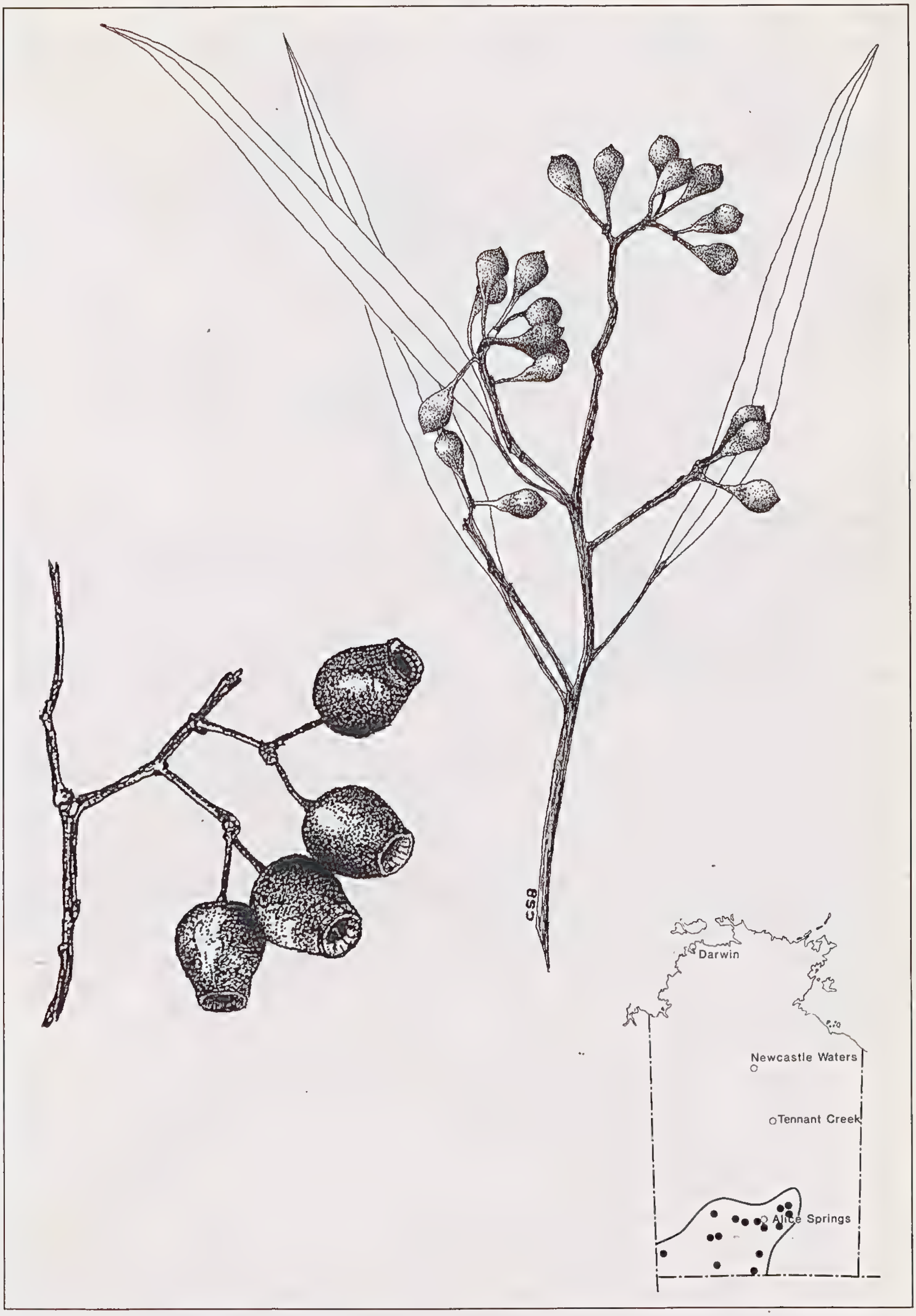
Found on rocky slopes and ridges of the central Australian ranges sometimes with mallee forms of *E. intertexta*, *E. sessilis* and *E. gillenii*. This species was previously known as E. *polycarpa* var. *oligocarpa*.

Propagation

This species grows well on sandy soils but is not tolerant of salty or high pH soils. It is frost tolerant.

See Plate 13. Page 10.

Mallee Bloodwood



E. gamophylla F. Muell.

Name

Both its specific and first common name refer to most of the leaves being joined together at the base. The second common name refers to the blue, glaucous colour of the leaves and young stems.

Description

A glaucous mallee 3 - 5 m high, occasionally to 8 m.

Bark	smooth and often waxy, larger trees with rough flaky bark on the trunk.
Leaves	opposite, orbicular, joined at the base and often encircling the stem, 1 - 8 cm diameter or ovate and with a short petiole.
Buds and flowers	in umbels of 3 - 7.
Operculum	hemispherical or flattened.
Pedicels	1 - 4 mm.
Peduncles	4 - 8 mm.
Fruit	shortly stalked, campanulate or pyriform, 6 - 10 mm long, 5 - 7mm in diameter.
Valves	short triangular, set at, or just below the rim.
Flowers	October to March.

Identification

The opposite, bluish-grey leaves are characteristic of this species and serve to distinguish it from all other eucalypts occurring within the same area except *E. gongylocarpa* which is a taller tree with larger woody fruits.

Habitat and Distribution

Usually found in deep red sand or on rocky outcrops, nearly always with spinifex. It extends from the Pilbara region (WA) across to north-west SA and the southern NT.

Notes

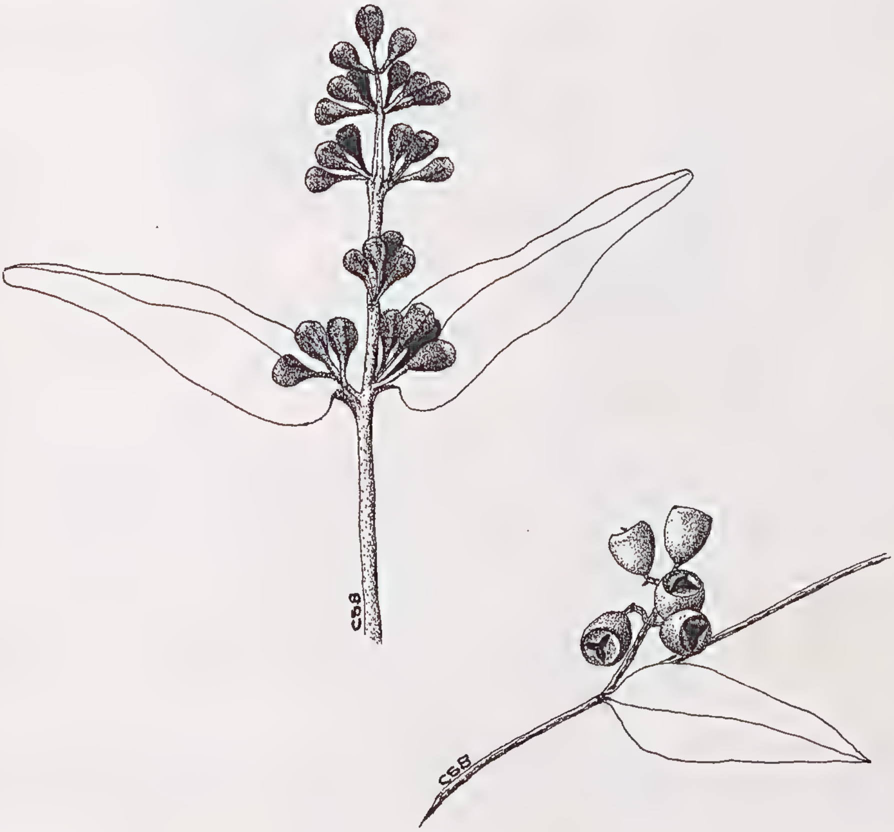
This species is closely related to *E. odontocarpa*. (Please refer to notes under *E. odontocarpa* for differences between the two).

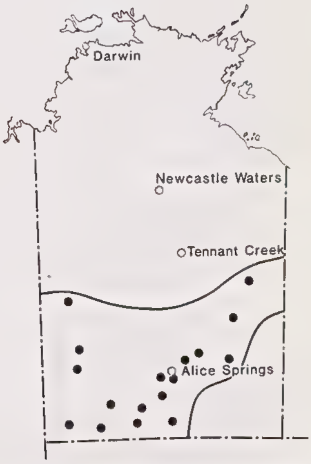
Propagation

E. gamophylla is a very hardy species that will tolerate frosts and a wide range of soil types. Young seedlings have survived well in periods of low rainfall. Under good conditions it has grown into a mallee 2.5 m tall in 4 years. With regular watering, individuals grown in Alice Springs have reached 2 m in 2 years and 6 m after 10 years.

See Plate 14. Page 10.

Blue Mallee, Twin-leaved Mallee





E. gillenii Ewart & L. Kerr

Name

The species name refers to Mt Gillen, near Alice Springs (NT), where the species was first collected. The common name alludes to its growth habit and its affinities with other red gum species.

Description

A small mallee 3 - 5 m high. This is a highly variable species with regard to leaf dimensions and fruit characters.

Bark	smooth grey, sometimes shedding in ribbons.
Leaves	alternate, thick, pale green, lanceolate, 10 - 25 cm long.
Buds and flowers	in umbels of 3 - 7.
Operculum	conical.
Pedicels	2 - 6 mm.
Peduncles	5 - 10 mm.
Fruit	globular, 8 - 10 mm long x 7 - 10 mm in diameter.
Valves	exserted.
Flowers	January to March.

Identification

This species may be confused with a number of others but is distinguished by its smooth upper trunk, ribbon-like strips of bark on the lower trunk and its fruits, the majority of which have 4 broad, exserted valves.

Habitat and Distribution

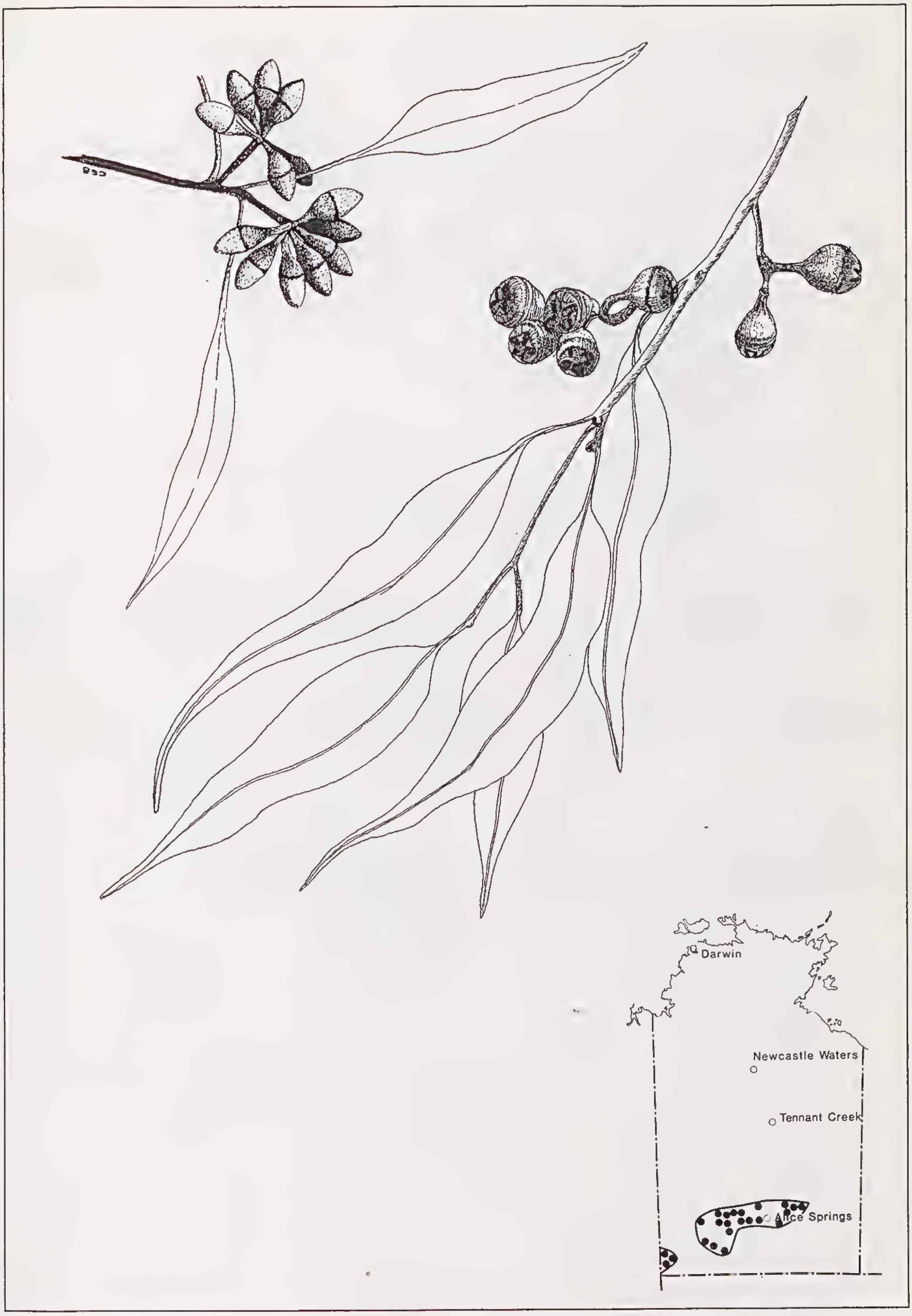
This species is found from the Hale River, east of Arltunga, through the MacDonnell Ranges to Mt Razorback and also in the Petermann Ranges.

Propagation

Although this species typically occurs on rocky hill slopes it has been successfully grown in deep, sandy-clay soils in the Alice Springs region. It is also frost tolerant. Planted specimens have developed into small trees 2 m tall in 3 years.

See Plate 6. Page 8.

Mallee Red Gum



E. gongylocarpa Blakely

Name

The species name refers to the round fruit, and the common name, to the pattern and colour of bark on the trunk.

Description

A tree 8 - 12 m high, sometimes to 20 m, with the trunk often dividing close to the ground.

Bark	smooth, white to silver-grey with thin yellow-brown scales, sometimes shreds of brown bark at the base.
Leaves	Two leaf forms are commonly found on adult trees: Juvenile leaves which are opposite, waxy, glaucous, ovate, 4 - 7 cm long, and adult leaves which are mostly opposite, glaucous, oblong-lanceolate, 2 - 6 cm long (or sometimes longer).
Buds and flowers	in umbels of 3 - 7.
Operculum	hemispherical.
Pedicels	3 - 6 mm.
Peduncles	15 mm.
Fruit	globular with slightly flattened ends, 6 - 9 mm long x 6 - 8 mm diameter.
Valves	set well below the rim (included).
Flowers	May to October.

Identification

This is a distinctive species with smooth white or light grey bark and bluish-grey, mostly opposite leaves. *E. gamophylla* is similar in some respects but is generally a mallee or small tree and has smaller fruits.

Habitat and Distribution

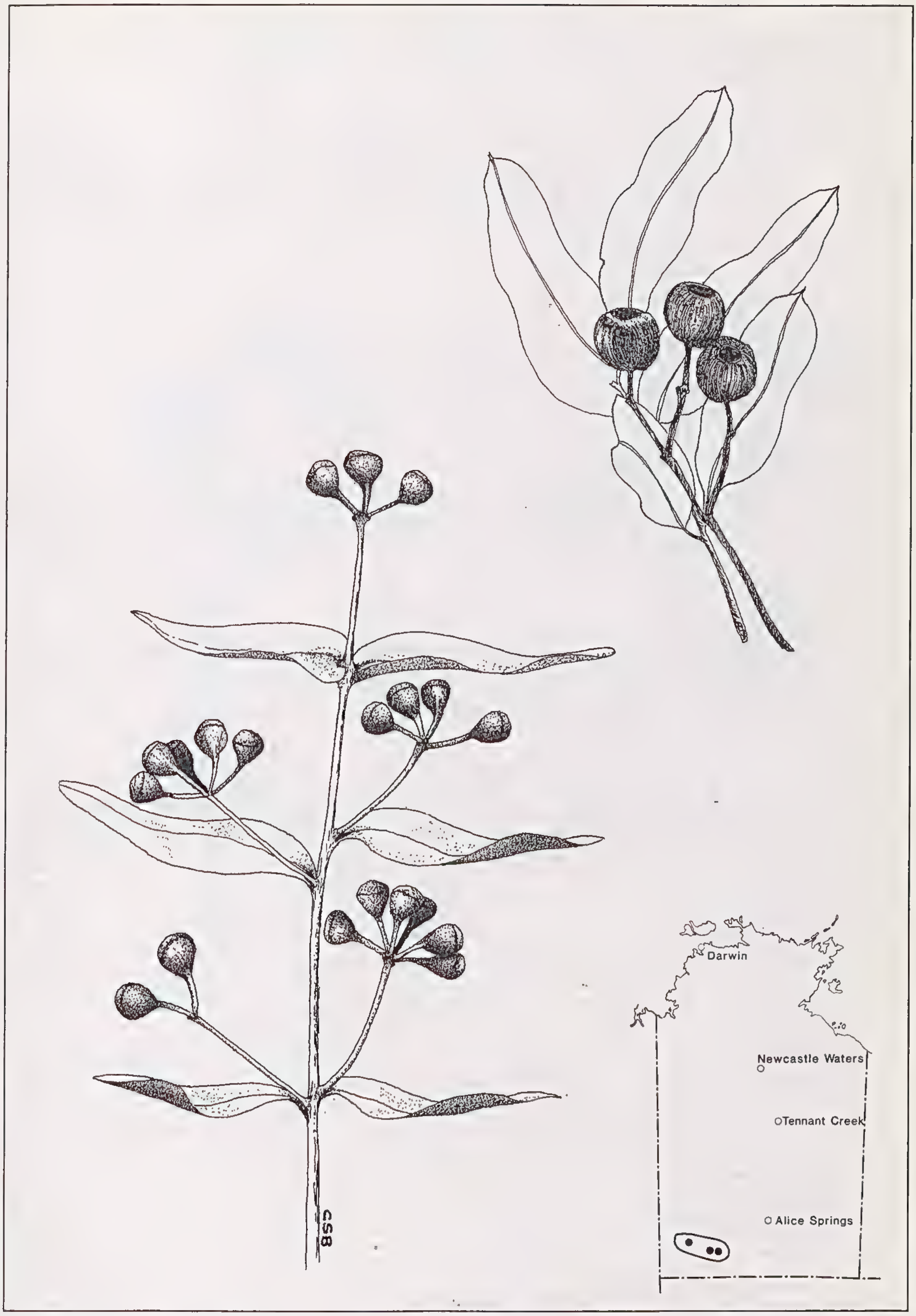
Found on sand plains and sand dunes close to salt lakes. It extends from Meekatharra (WA) across to north-west SA, and south-west NT as far as Lake Amadeus.

Propagation

In central Australia this attractive species has proven to be a hardy species, tolerant of frosts and has been successfully grown in deep sand, sandy-clays and loam soils. Under good conditions it has grown to 2.5 m tall in 4 years. When drip irrigated regularly, heights of 6 m have been achieved 3 years after planting.

See Plate 7. Page 8.

Marble Gum



E. intertexta R. Baker

Name

The species name refers to the interwoven arrangement of the wood fibres. The common name refers to the species similarity to the coolibah, *E. microtheca*.

Description

A tree 8 - 25 m high, sometimes smaller and taking on a mallee habit.

Bark	usually smooth and chalky white or yellow, lower bark is rough and box-like.
Leaves	alternate, dull bluish-green, lanceolate, 5 - 15 cm long.
Buds and flowers	in umbels of 3 - 7.
Operculum	rounded or conical.
Pedicels	3 - 6 mm.
Peduncle	7 - 12 mm.
Fruit	ovoid to pyriform, 6 - 8 mm diameter.
Valves	short, included.
Flowers	throughout the year depending on rainfall.

Identification

Within its NT distribution, this species is easily confused with other rough barked species, especially *E. microtheca* and, occasionally smooth barked specimens can be mistaken for *E. camaldulensis*. In nearly all cases *E. intertexta* may be distinguished by its fruits which have inserted valves and by its dull, bluish-grey leaves.

Habitat and Distribution

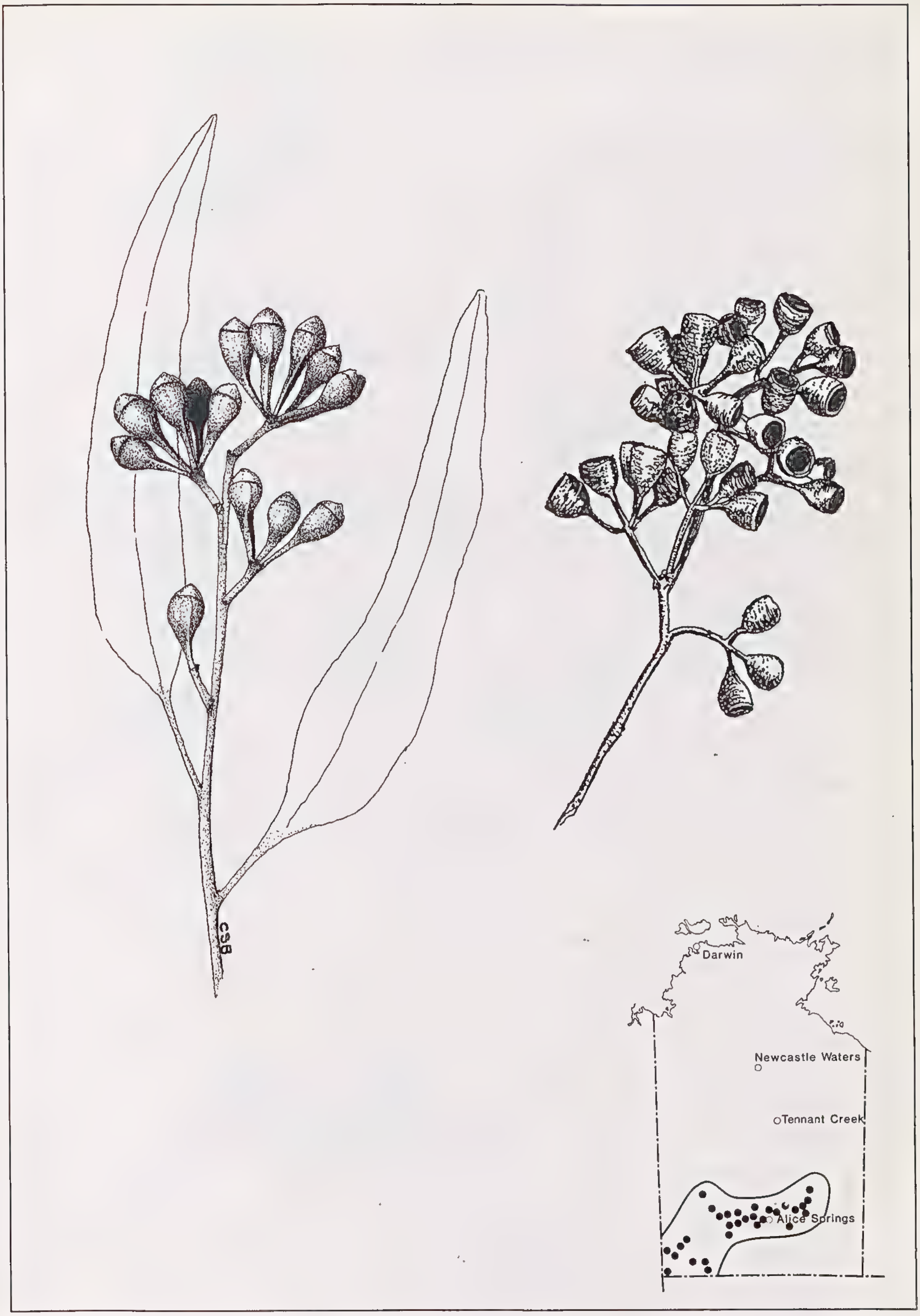
Found near watercourses and on alluvial flats usually in somewhat calcareous or saline soils, sometimes also occurs on rocky hill slopes and in Mulga (*Acacia aneura*) communities. It has a distribution encompassing western NSW, northern SA, southern NT and adjacent areas of WA.

Propagation

E. intertexta has been grown in sand, sandy-clays and loams, and is reasonably salt tolerant. It is a hardy tree which provides good shade, shelter and firewood. Under favourable conditions it has grown to 3 m tall in 3 years, and into a healthy tree 6 m tall in 10 years. Trees which have been well watered have grown to 7 m tall in 4 years.

See Plate 8. Page 8.

Gum-barked Coolibah, Bastard Coolibah



E. leucophloia Brooker

Name

The species name refers to the striking white bark, and the common name to the brittle nature of the branches which snap off easily.

Description

A small tree or mallee 3 - 7 m high.

Bark	smooth, white powdery.
Leaves	lanceolate, 5 - 10 cm long.
Buds and flowers	in umbels of 7 - 11.
Operculum	hemispherical or conical.
Pedicels	2 - 3 mm.
Peduncles	4 - 10 mm.
Fruit	hemispherical or cupular, 5 - 8 mm diameter, with 3 - 4 sharply pointed.
Valves	strongly exserted, triangular.
Flowers	April to September.

Identification

The smooth, white, powdery bark distinguishes *E. leucophloia* from most other local species except *E. brevifolia*, *E. camaldulensis*, *E. papuana* and smooth barked specimens of *E. intertexta*. It is most easily distinguished from these species by differences in the size and shape of its buds and fruits.

Habitat and Distribution

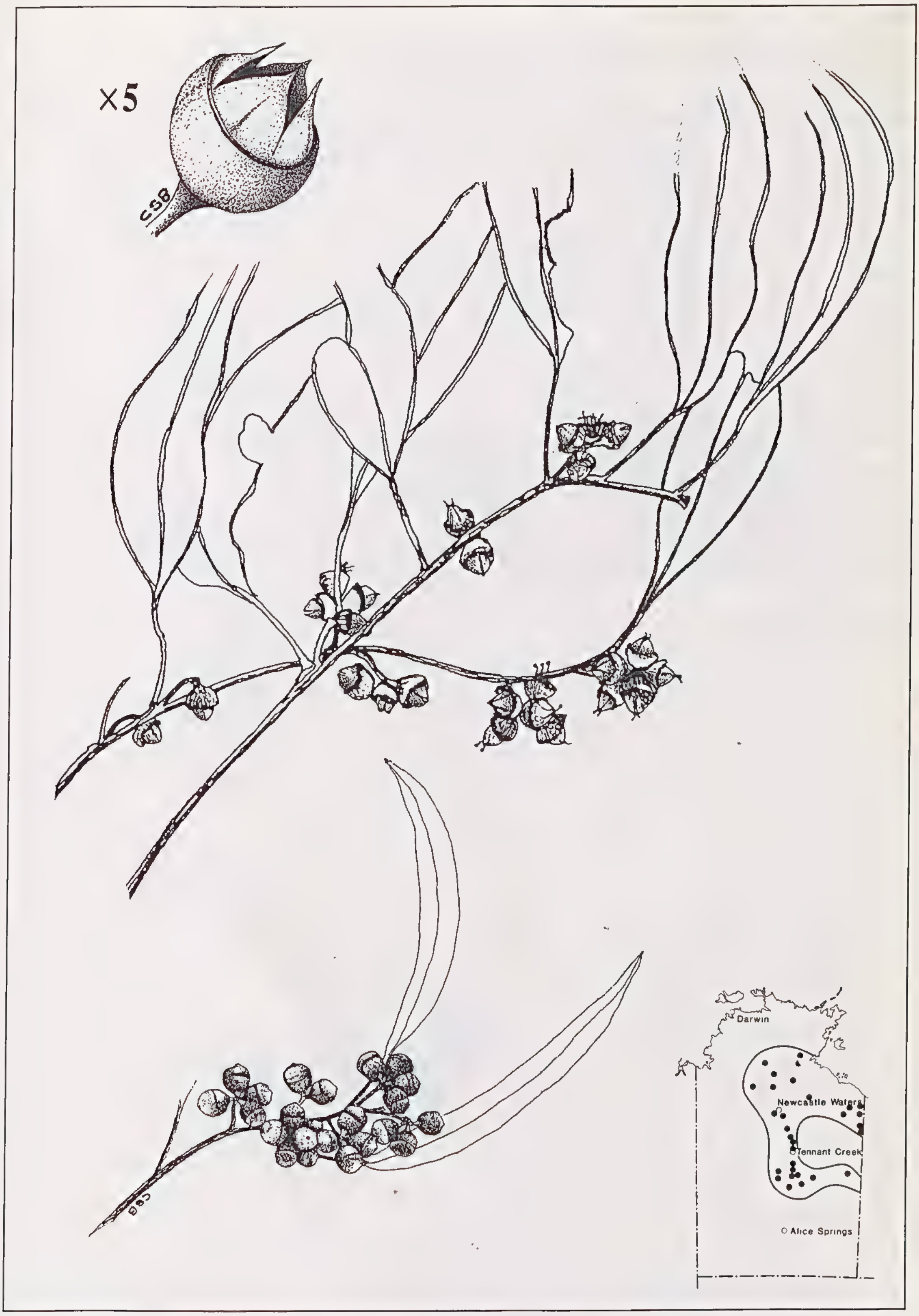
Found on lateritic or stony rises through central NT to the Cloncurry area of Queensland, usually in association with spinifex.

Notes

This species is closely related to *E. brevifolia*.

See Plate 15. Page 10.

Snappy Gum, Migum



E. lucens Brooker & Dunlop

Name

Both the species and common names refer to the shiny leaves.

Description

Mallee to 3 m tall with smooth trunks and often some rough bark at the base.

Leaves	green and glossy, lanceolate, 8 - 12 cm long.
Buds and flowers	in umbels of 7 - 11.
Operculum	conical.
Pedicels	3 - 4 mm.
Peduncles	5 - 7 mm.
Fruit	obconical, 3 - 6 mm long x 4 - 5 mm diameter.
Valves	included.
Flowers	January to April.

Identification

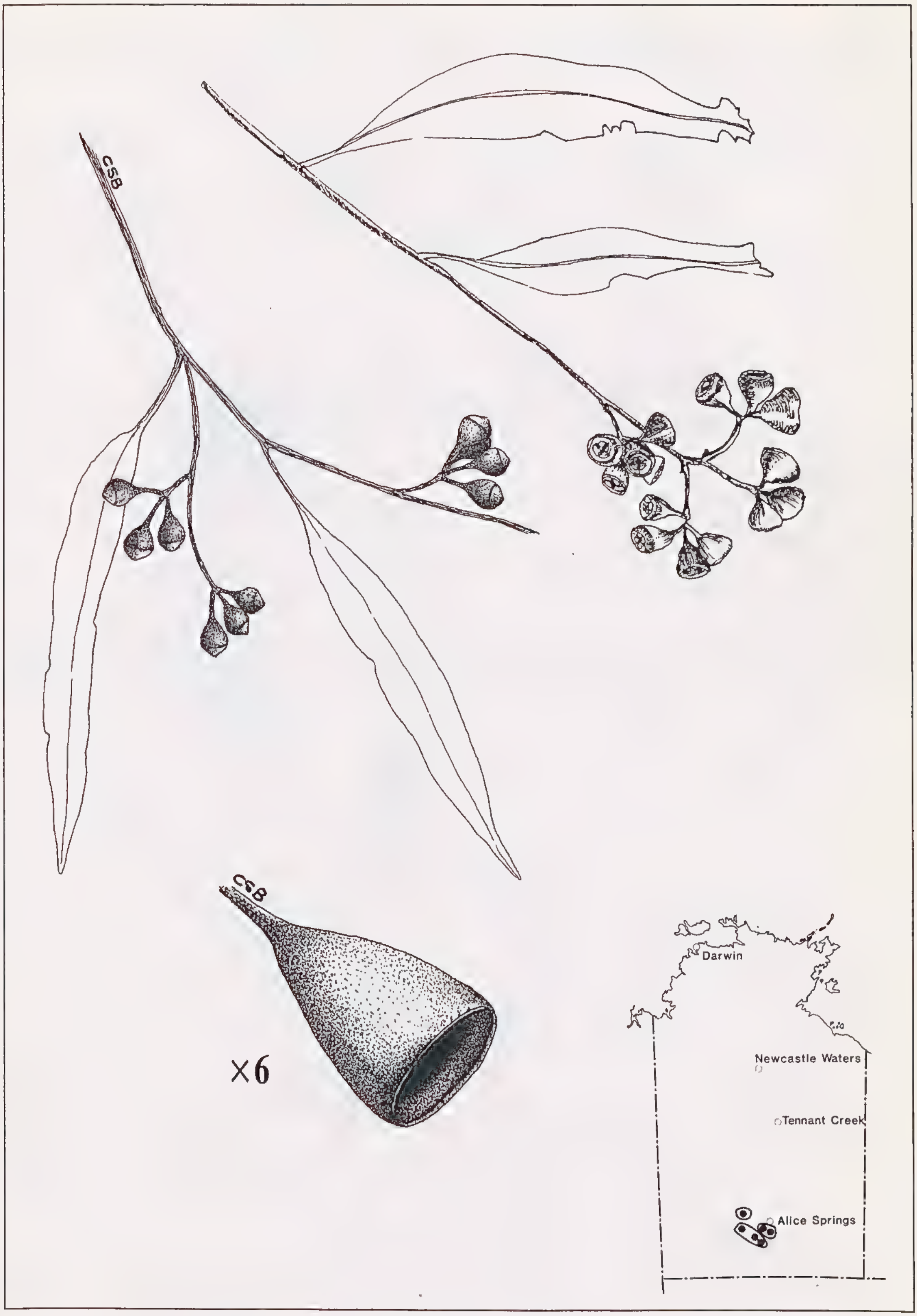
This species is distinguished by its shiny leaves which are 1-2 cm wide, and its habitat preference for the upper slopes of the central Australian ranges.

Habitat and Distribution

A rare mallee found in shallow, stony soils high on the sandstone ridges of the James and Waterhouse Ranges and the quartzite ridges of Mt Sonder.

See Plate 16. Page 11.

Shiny-leaved Mallee



E. mannensis Boomsma

Name

The species name refers to the Mann Ranges (SA) where the species was first found. There is no known common name.

Description

A mallee or small tree to 7 m high, but usually 3 - 4 m.

Bark	smooth, grey, long and peeling with flaky bark at base.
Leaves	alternate, glossy, green to green-yellow, narrow-lanceolate, 6 - 14 cm long.
Buds and flowers	in umbels of 5 - 7, or occasionally up to 11.
Operculum	hemispherical.
Pedicels	1 - 3 mm.
Peduncles	3 - 6 mm.
Fruit	hemispherical to pyriform, 5 - 8 mm long x 5 - 8 mm diameter.
Valves	usually 3, long and pointed, exserted well above the rim.
Flowers	April to October.

Identification

This species may be distinguished by its shiny leaves and the strongly exserted fruit valves.

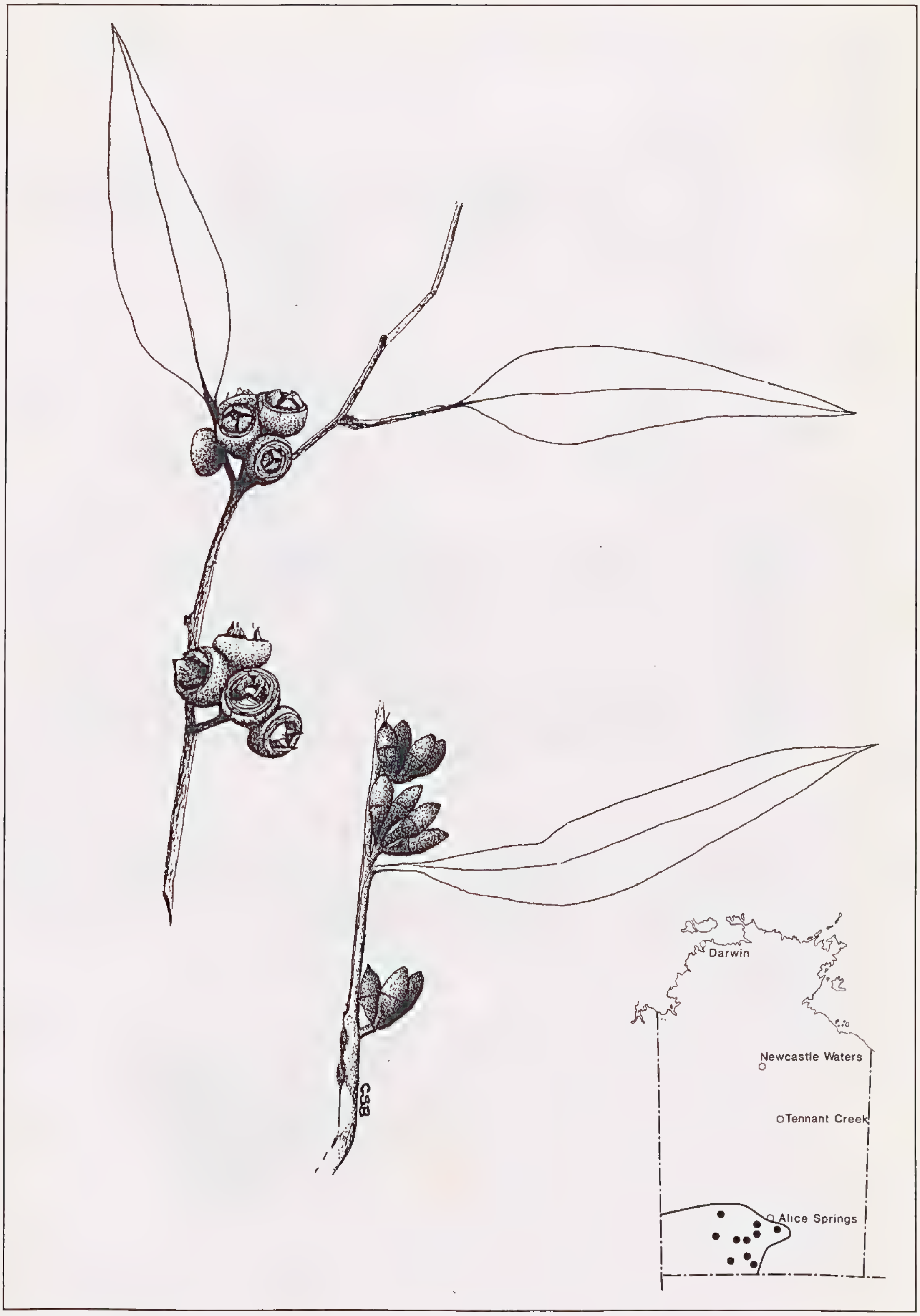
Habitat and Distribution

Found in north-west SA and south-west NT on red sand dunes and outcropping ranges.

Propagation

E. mannensis is a frost tolerant species and has been grown successfully in sand and sandy-loam soils in the Alice Springs region. Growth is fairly slow and specimens have developed into dense, multi-stemmed shrubs 1.5 m high after 4 years.

See Plate 9. Page 9.


CSB
Darwin
Newcastle Waters
Tennant Creek
Alice Springs

E. microtheca F. Muell.

Name

The species name refers to the small fruit, and the common name is derived from an Aboriginal name for the species.

Description

A small to medium-size straggly tree, 15 - 20 m high.

Bark	rough, fibrous dark grey, persistent to the primary branches or shedding from most of the trunk and branches to reveal a white or pale grey, smooth surface.
Leaves	alternate, dull grey-green, lanceolate, 6 - 15 cm long.
Buds and flowers	in umbels of 3 - 7.
Operculum	conical.
Pedicels	1 - 2 mm.
Peduncles	4 - 8 mm.
Fruit	small, hemispherical with thin, almost papery walls, 2 - 4 mm long x 2 - 5 mm diameter.
Valves	broad, flush with or just exceeding the rim.
Flowers	February to June.

Identification

This species is highly variable in appearance and may be mistaken for other smooth barked or rough barked species. In most cases, its small fruits with exserted valves and its preference for low lying or seasonally flooded habitats can be used to distinguish it.

Habitat and Distribution

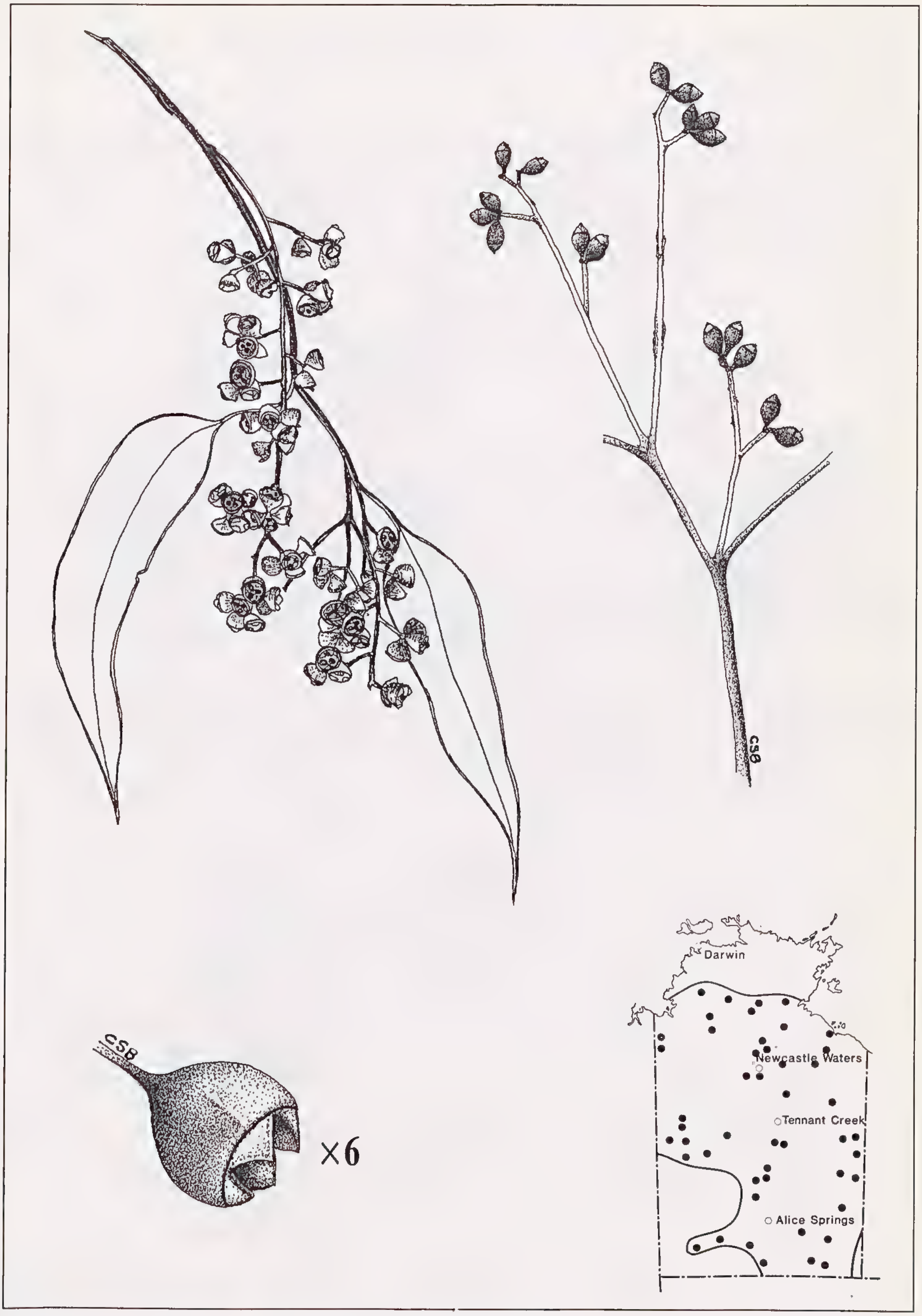
Common in heavy soils on flood-outs and on seasonally flooded areas around swamps and lagoons, and less commonly along water courses. From the Pilbara and Kimberley regions of WA, it extends through the NT into Qld (except Cape York and the eastern coastal fringe) and intermittently into north and north-western NSW.

Propagation

E. microtheca has been grown on a variety of soil types in the Alice Springs region and is frost tolerant and moderately salt tolerant. Cultivated specimens should be planted in moist sites or provided with supplementary watering. Under such favourable conditions seedlings have achieved heights of 7 m in 4 years. With less watering growth rates are reduced considerably.

See Plate 10. Page 9.

Coolibah (or Coolabah)



E. normantonensis Maiden & Cambage

Name

Both the species and common names refer to the area in which the species was originally found (Normanton, Qld).

Description

A small tree or mallee 3 - 10 m high, rough bark persistent on the lower trunk, sometimes extending to the larger branches with age, smooth and brown or grey on smaller branches.

Leaves	alternate, glossy, narrow-lanceolate, 8 - 12 cm long.
Buds and flowers	in terminal umbels of 3 - 7.
Operculum	conical.
Pedicels	2 - 6 mm.
Peduncles	10-15 mm.
Fruit	turbinate to cylindrical-urceolate, 3 - 4 mm long and wide.
Valves	small, included.
Flowers	April to October.

Identification

This species is easily distinguished from others occurring in the same regions by its rough fibrous bark, glossy leaves and included valves.

Habitat and Distribution

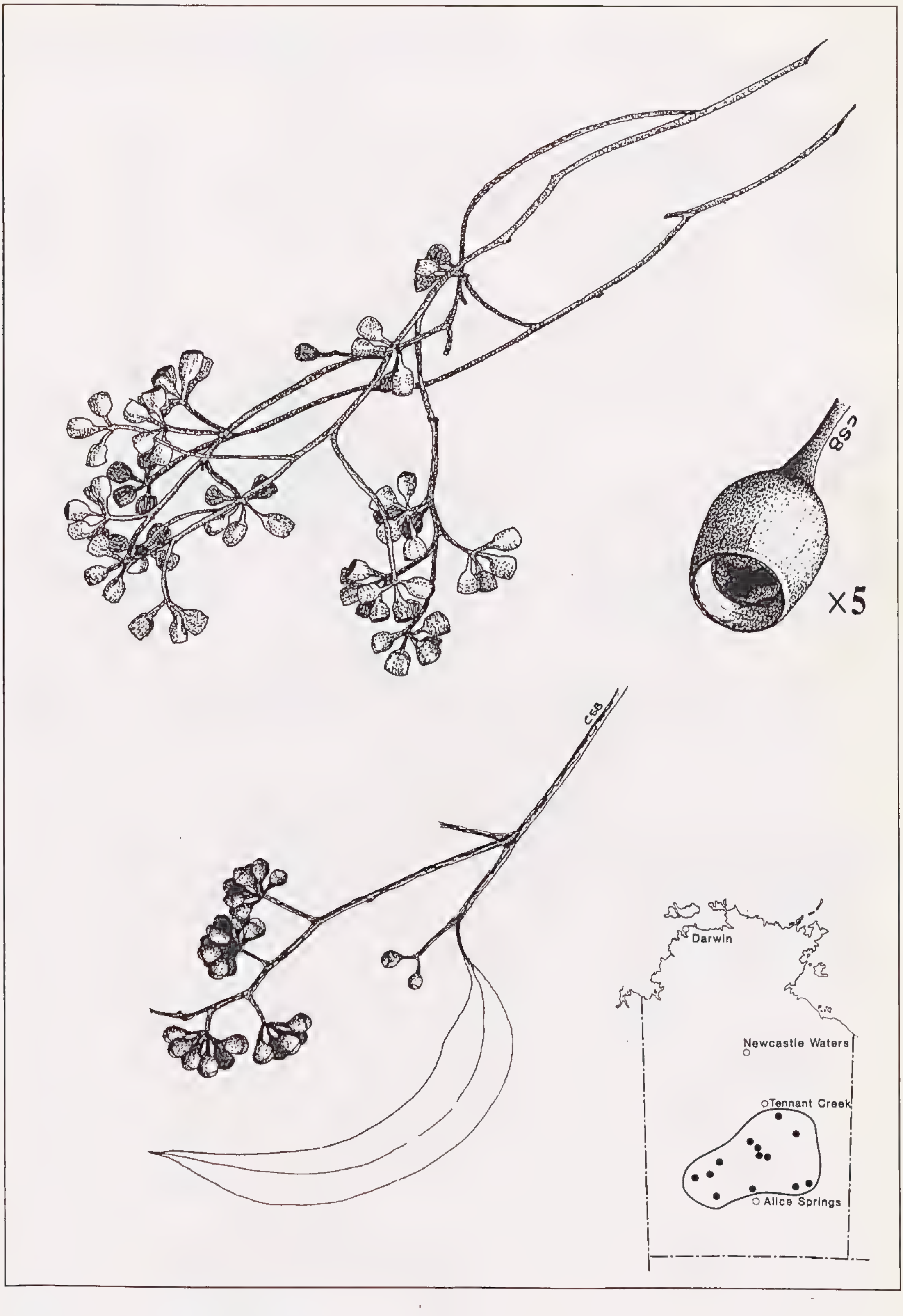
Found on sandy laterite or sandstone hills from north of the MacDonnell Ranges to Tennant Creek. The NT population appears to be disjunct from that in Qld, separated by the deep cracking clays of the Barkly Tablelands.

Propagation

This species has been grown successfully in sandy-clay soils. In the Alice Springs region young growing tips are damaged by frosts. With supplementary watering the best growth rate achieved in this region has been 1.5 m in 4 years.

See Plate 17. Page 11.

Normanton Box



E. odontocarpa F. Muell.

Name

The species name refers to the small "teeth" around the rim of the fruit. The common name refers to Sturt Creek (NT), the region from which the species was first described.

Description

A mallee 1.5 - 4 m high, with smooth light-coloured bark.

Leaves	normally opposite, bright green, broad-lanceolate, 7 - 12 cm long.
Buds and flowers	in umbels of 3.
Operculum	blunt, hemispherical.
Pedicels	0 - 3 mm.
Peduncles	0 - 5 mm.
Fruit	campanulate, with 2 - 5 small teeth on the rim, 8 - 12 mm long, 5 - 7 mm diameter.
Valves	broad, included.
Flowers	August to November.

Identification

This species is most easily distinguished by its leaves which are normally opposite and its fruits and buds which characteristically have from two to five small, projecting teeth on the rim.

Habitat and Distribution

Found on low sandstone hills or red sandy plains in the northern part of central Australia. It extends from the Kimberley region across the central regions of the NT.

Notes

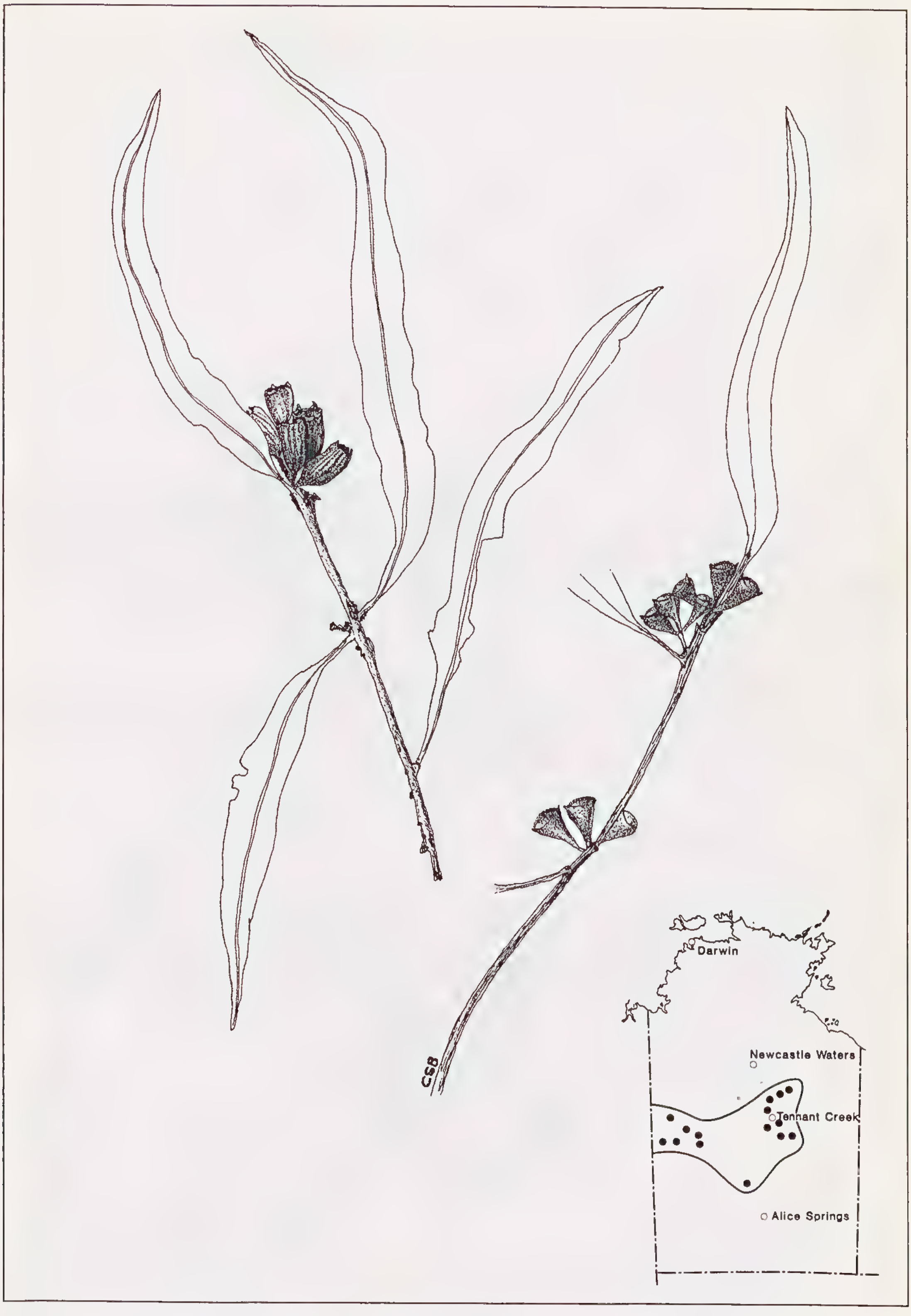
Some botanists consider that this species and *E. gamophylla* should be treated as one (P. K. Latz pers. comm.). It is certainly closely related and intermediate forms having characters of both this species and *E. gamophylla* are found in the Barrow Creek region.

Propagation

This species has been grown successfully on a variety of soils. However it is not particularly frost tolerant and growing tips are usually damaged during winter months in the Alice Springs region. Under these rather unfavourable conditions, growth rates are slow and specimens have developed into dense mallees 1 m tall after 3 years.

See Plate 18. Page 11.

Sturt Creek Mallee



E. opaca D. Carr & S. Carr

Name

The species name refers to the dark lusterless foliage of this species while the common name refers to the dark red substance called kino commonly seen exuding from wounds on the trunk and larger branches.

Description

A tree 6 - 10 m or occasionally taller.

Bark	grey, tessellated, usually persistent to the main branches.
Leaves	alternate, pale green, lanceolate, 10 - 20 cm long.
Buds and flowers	in umbels of 3 - 7.
Operculum	hemispherical to conical.
Pedicels	5 - 18 mm.
Peduncles	6 - 18 mm.
Fruit	cylindrical-urceolate, 18 - 25 mm long, 15 - 25 mm in diameter.
Valves	deeply included.
Flowers	March to July.

Identification

E. opaca is a rough barked species with large, characteristically urn-shaped bloodwood fruits and alternate leaves. These features serve to distinguish it from other local bloodwoods except *E. chippendalei* which has more rounded fruits with shorter pedicels. *E. chippendalei* is nearly always found in association with sand dune habitats while *E. opaca* occurs more often on loamy soils.

Habitat and Distribution

Found in a variety of habitats but most commonly in alluvial soils on lower hill slopes and better watered plains (and often in Mulga communities) from the Kimberley region through the NT (south of Katherine) to western Qld and north-west NSW.

Notes

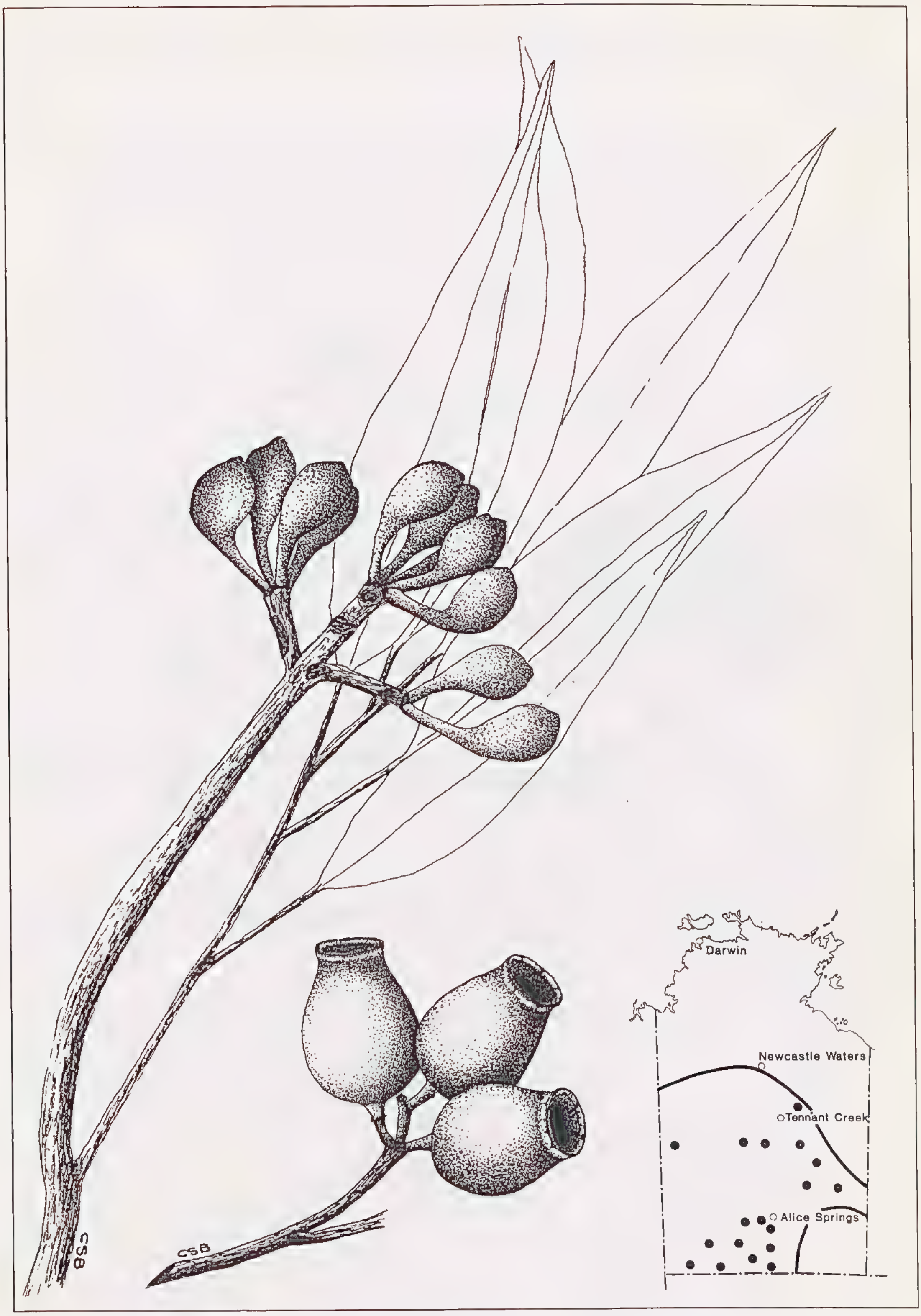
This species was previously known as *E. terminalis* in the southern NT.

Propagation

This species grows well in central Australia on sites receiving additional water from run-off or irrigation. With no irrigation after establishment *E. opaca* has remained as a small stunted plant less than 1 m tall after 3 years. With regular watering heights of 1.5 m have been recorded 2 years after planting and heights of 4 m after 6 years.

See Plate 11. Page 9.

Bloodwood


CSB
CSB
Darwin
Newcastle Waters
Tennant Creek
Alice Springs

E. orbifolia F. Muell.

Name

Both the specific and common names refer to the rounded leaves which are typical of this species.

Description

A mallee 2 - 8 m tall.

Bark	thin, fibrous and shedding in small curly strips to reveal a red or pink smooth surface beneath.
Leaves	alternate, obovate to orbicular, obtuse, grey-green in colour, 3 - 7 cm in diameter.
Buds and flowers	in umbels of 2 - 7.
Operculum	conical or hemispherical.
Pedicels	4 - 7 mm.
Peduncles	10 - 25 mm.
Fruit	hemispherical-campanulate, 5 - 10 mm long x 12 - 18 mm in diameter.
Valves	narrow-triangular, prominently exserted.
Flowers	April to October.

Identification

This is a very distinctive species and is easily distinguished by its alternate, almost round leaves and attractive bark. Its preference for rocky habitats on the upper slopes of the central Australian ranges may also aid identification.

Habitat and Distribution

Restricted to the upper slopes of quartzite outcrops or sandstone hills in the central MacDonnell and southern ranges. Found in similar habitats in WA.

Notes

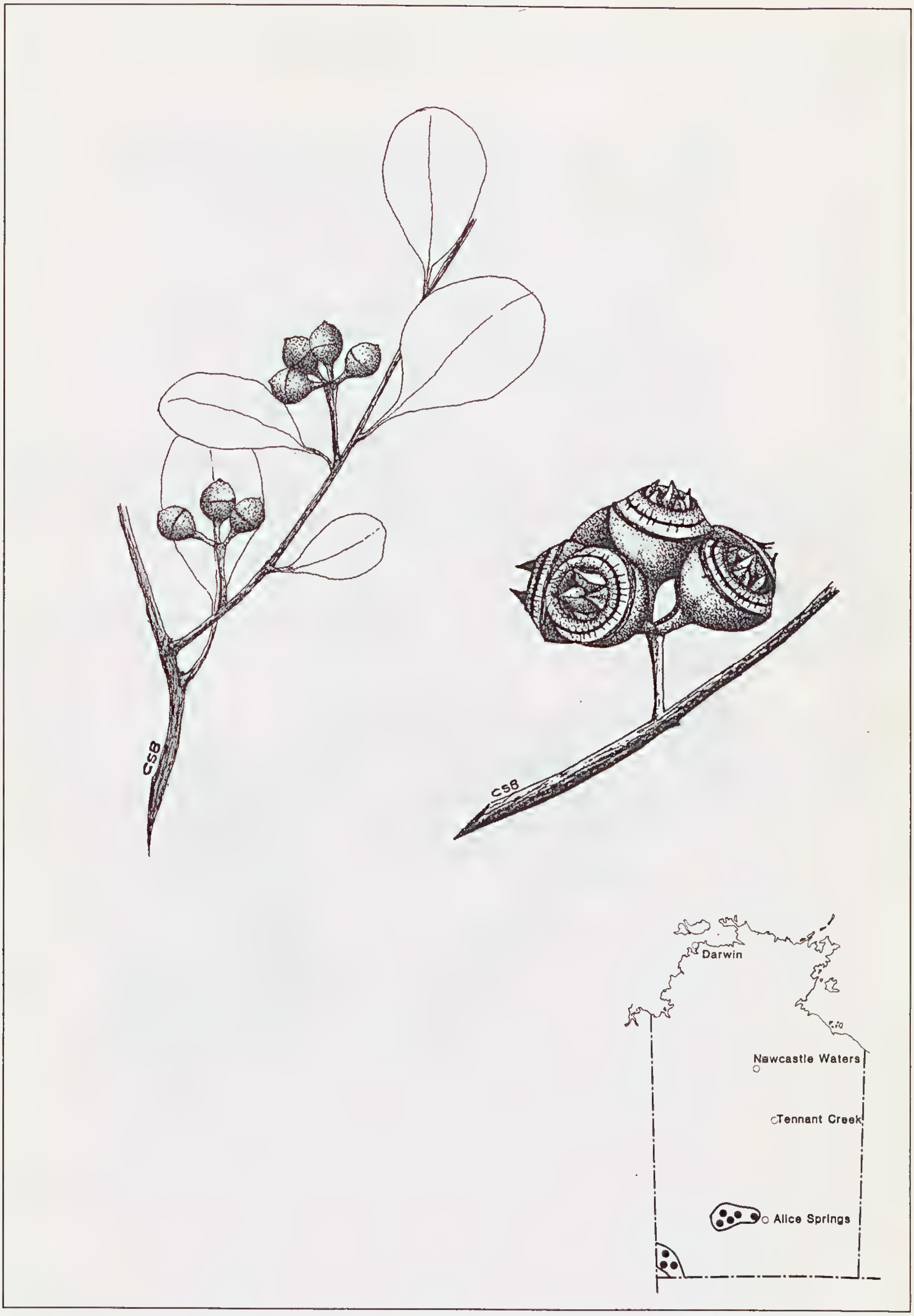
The name *E. websterana* has also been applied to this species in the southern NT. It sometimes hybridises with *E. sessilis* producing a form which some botanists have considered a separate species. Refer to Jessop (1981), *E. aff. orbifolia.*

Propagation

This species has been successfully propagated in Alice Springs and is frost tolerant. Ten years after planting on a deep loam soil and receiving supplementary irrigation, one specimen grew into a dense shrub 2.5 m tall and with a crown spread of 5 m.

See Plate 19. Page 12.

Round-leaved Mallee



E. oxymitra Blakely

Name

Both the specific and common names refer to the sharply-pointed operculum of the buds.

Description

A mallee to 4 m tall.

Bark	smooth, and occasionally some ribbons of peeling bark at the base.
Leaves	alternate, ovate to broad-lanceolate, often glaucous, to 13 cm long.
Buds and flowers	in umbels of 3 - 7.
Operculum	hemisperical with a distinctly pointed apex.
Pedicels	0 - 5 mm.
Peduncles	10 - 13 mm.
Fruit	glaucous, subglobular, 12 - 20 mm long and 10 - 15 mm in diameter.
Valves	3 - 5, exserted, triangular with long points.
Flowers	January to February.

Identification

This species is distinguished from other local eucalypts by its large fruits with exserted valves and its broad, lanceolate leaves. It may however, be confused with *E. sessilis* and *E. gillenii*, both of which also have large fruit. *E. gillenii* fruits tend to be slightly smaller and have shorter peduncles than *E. oxymitra* while those of *E. sessilis* are larger and have prominent ribs.

Habitat and Distribution

Found on rocky hills and on sandy soils overlying rocky or gravelly areas in the far south-west NT, north-west SA, and adjoining parts of WA.

Notes

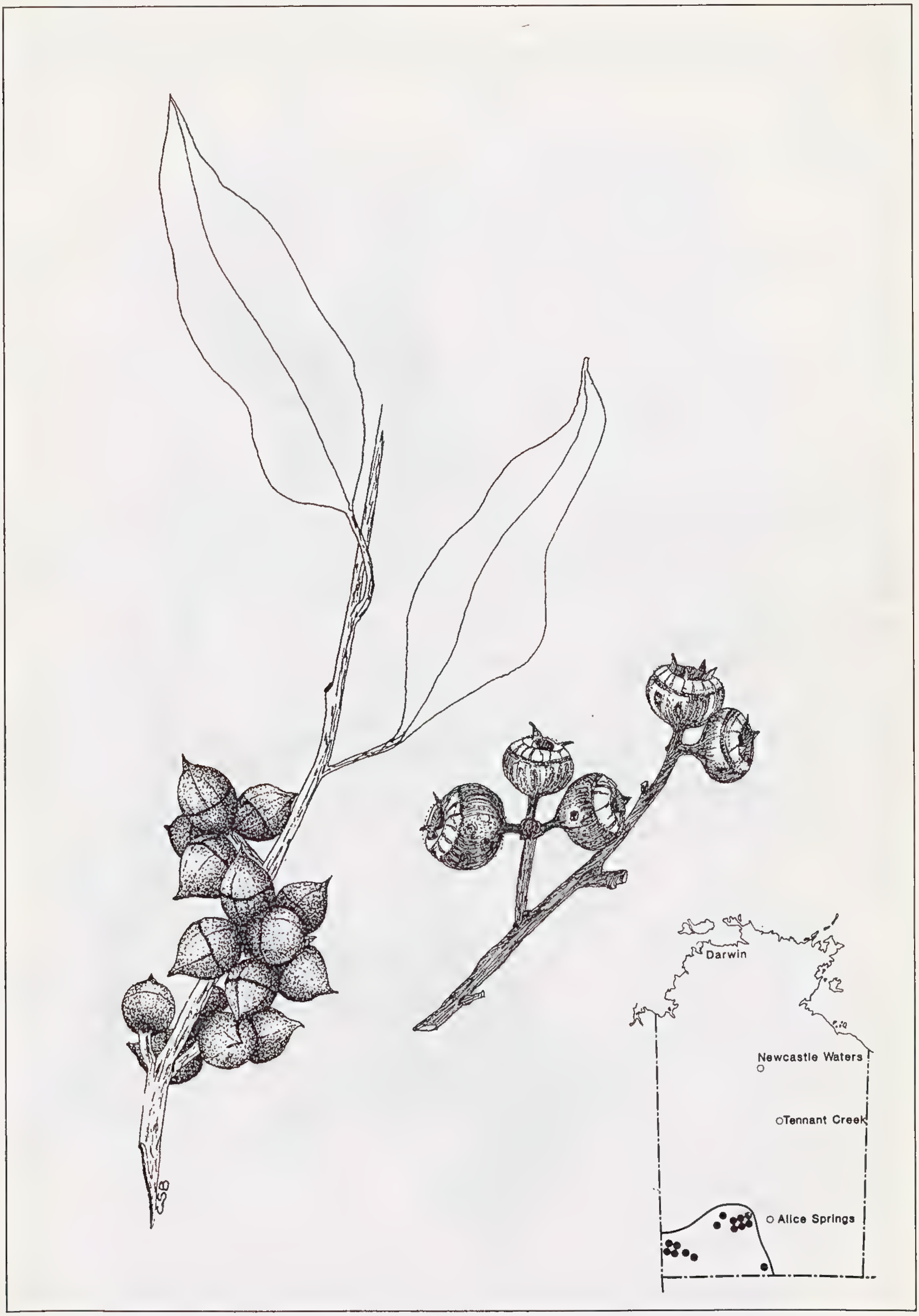
The size and shape of the fruit can vary considerably in this species.

Propagation

This species is a frost tolerant attractive ornamental tree. In central Australia it has been cultivated on sandy and sandy-loam soils and has achieved a height of 1.5 m in 4 years.

See Plate 20. Page 12.

Sharp-capped Mallee



E. pachyphylla F. Muell.

Name

The species name refers to the plant's thick leaves, while the common name refers to the bright red operculum of the bud.

Description

A mallee 1.5 - 3 m tall, with

Bark	smooth grey above and peeling in ribbons at the base.
Leaves	alternate, thick, ovate to lanceolate, to 8 cm long.
Buds and flowers	in umbels of 3.
Operculum	long, pointed and ribbed.
Pedicels	3 - 6 mm.
Peduncles	5 - 10 mm.
Fruit	hemispherical to truncately conical or subglobular, 15 - 17 mm long and 17 - 30 mm in diameter.
Valves	short, exserted.
Flowers	July to December.

Identification

E. pachyphylla is a distinctive mallee with large, ribbed fruits and broad, lanceolate leaves. It is very similar to *E. sessilis* but differs in having less buds and flowers per cluster (3 as opposed to 3 - 7 for *E.sessilis*) and longer pedicels. These two species also occur in different habitats.

Habitat and Distribution

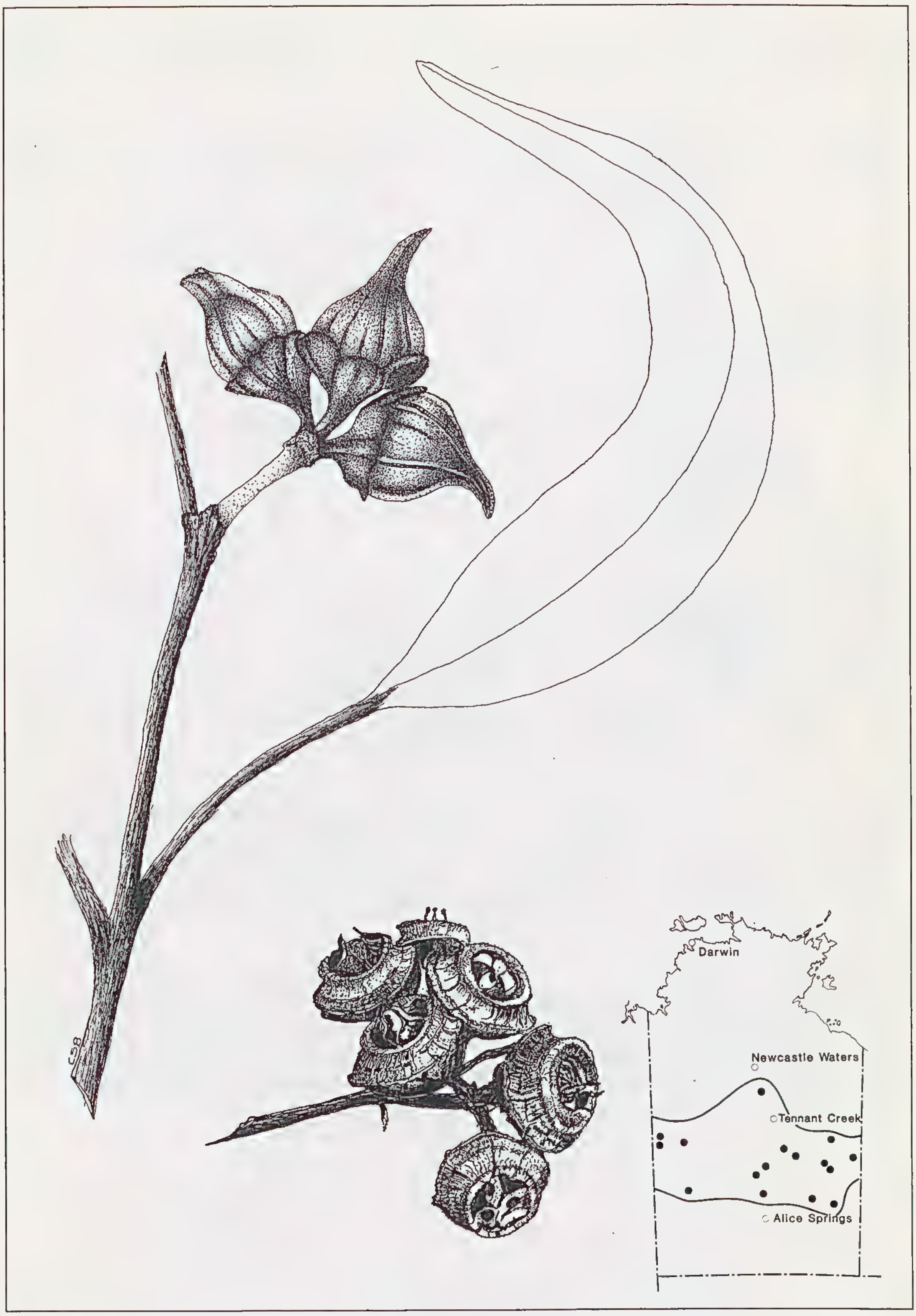
Found in deep red sand and on low stony rises in the northern part of central Australia.

Propagation

E. pachyphylla grows in a variety of soils and tolerates mild frosts but may be damaged by severe frosts. Under favourable conditions it has grown into an attractive mallee 1 m tall in 3 years. Well watered specimens have grown into compact trees 4 m tall in 10 years.

See Plate 12. Page 9.

Red-bud Mallee



E. papuana F. Muell.

Name

The species name refers to Papua from where the species was first described. The common name refers to its very white trunk which can give the trees a ghost-like appearance, especially in the moonlight.

Description

A variable species, ranging in size from a small, crooked tree of 7 - 10 m or less to a moderate to large tree to 20 m tall.

Bark	smooth, white.
Leaves	light or dark green, shiny, pendulous and often twisted, lanceolate, 5 - 18 cm long.
Buds and flowers	in umbels of 3 - 11.
Operculum	hemispherical.
Pedicels	4 - 7 mm.
Peduncles	4 - 7 mm.
Fruit	thin and papery, campanulate to urceolate, 7 - 10 mm long and 6 - 9 mm in diameter.
Valves	included.
Flowers	July to February.

Identification

This species is most easily identified by its smooth, white bark and irregularly shaped, papery fruits which are easily crushed between the fingers.

Habitat and Distribution

Occurs as a solitary tree on alluvial plains, on hills, or even clinging precariously to rocky cliff faces. In the wetter regions to the north it occurs in woodland habitats. It is found from the Kimberley region (WA) through most of the NT to Qld and Papua New Guinea.

Notes

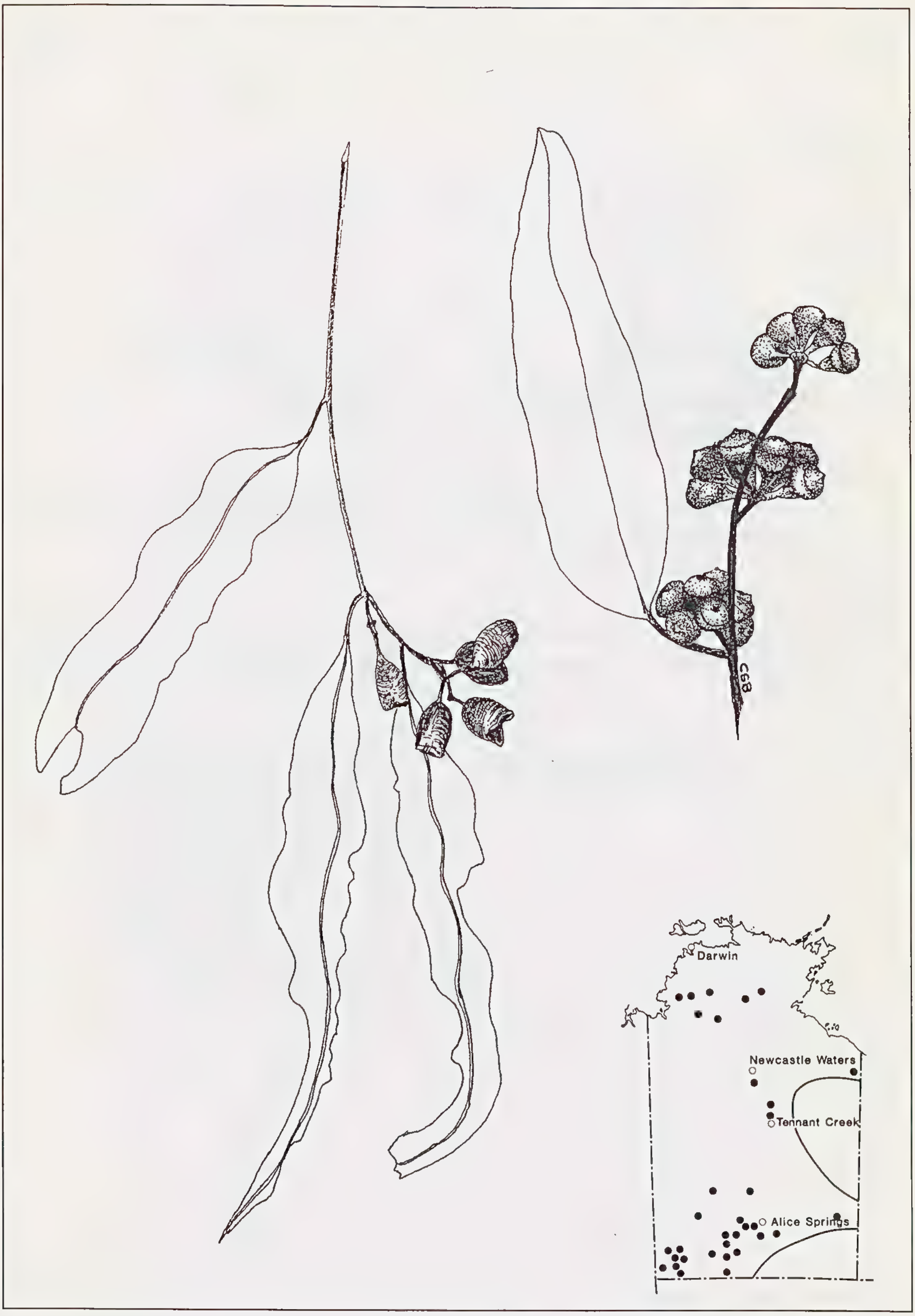
This tree is often depicted in Aboriginal water-colour paintings and was made famous by Namatjira's painting "twin ghost gums". The trees that are featured in this painting may be seen on Larapinta Drive, west of Simpsons Gap National Park (near Alice Springs). *E. papuana* is a highly variable species and a number of distinct forms are currently recognized. Further taxonomic research may separate these as distinct species.

Propagation

E. papuana has been grown in a variety of soil types and will tolerate frosts. Seed of this species drops very soon after ripening and so is usually difficult to collect. In central Australia *E. papuana* needs additional water either from irrigation or run-off. Planted trees not receiving additional water have remained as stunted specimens less than 1 m tall after 3 years. With regular irrigation heights of 2 m have been recorded 2 years after planting and 5m after 6 years.

See Plate 25. Page 14.

Ghost Gum



E. pruinosa Schauer

Name

Both the specific and common names refer to the whitish waxy bloom on the leaves, buds and young fruit.

Description

A small, straggly tree to 6 m tall.

Bark	persistent, rough, grey, fibrous.
Leaves	opposite, stem-clasping, glaucous, ovate or orbicular, 5 - 10 cm in diameter.
Buds and flowers	in umbels of 3 - 6.
Operculum	hemispherical with a short point .
Pedicels	5 - 10 mm.
Peduncles	12 - 25 mm.
Fruit	ovoid-truncate to cylindrical, 7 - 10 mm long and 6 - 8 mm in diameter.
Valves	broad exserted or level.
Flowers	March to November.

Identification

This species is distinguished by its rough grey or brown bark and bluish, opposite leaves. In these respects, it resembles *E. gamophylla*, although it has a more northerly distribution and tends to be a tree rather than a mallee.

Habitat and Distribution

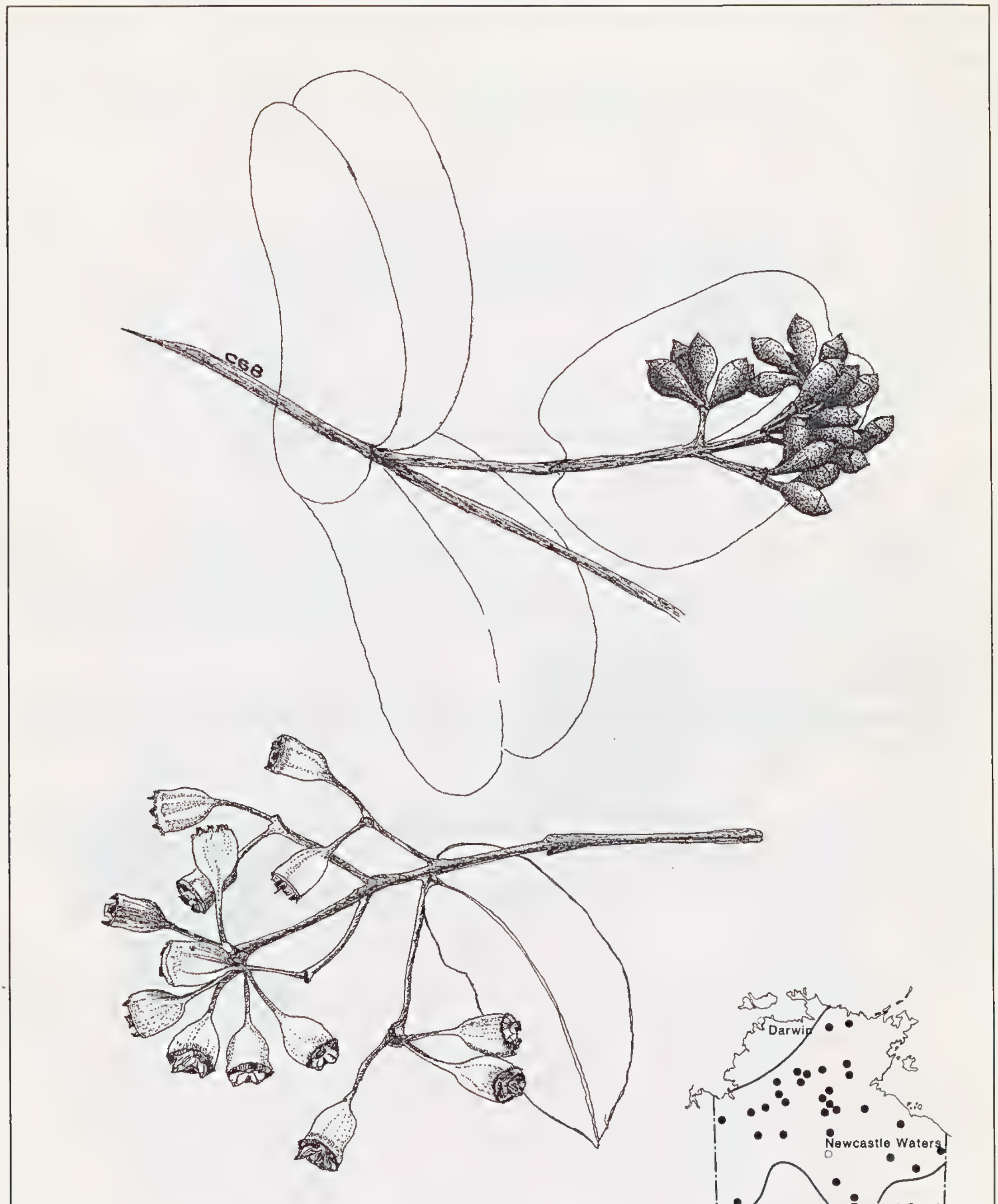
This species typically occurs on clay flats and depressions in far northern central Australia (common in the Tennant Creek region). It occurs from the Kimberley region through the northern NT to Townsville (Qld).

Propagation

E. pruinosa grows well in frost free regions and usually requires supplementary watering when grown in dry sites. Under good conditions it has grown into a tree 3 m tall in 4 years.

See Plate 21. Page 12.

Silver Box



E. sessilis (Maiden) Blakely

Name

The species name refers to the sessile fruit (without stalks), and the common name, to the Finke River (NT) from where the species was first described.

Description

A mallee, 1 - 4 m high.

Bark	smooth, grey above, peeling at the base.
Leaves	alternate, thick, broad-lanceolate, 6 - 18 cm long.
Buds and flowers	in umbels of 3 - 7.
Operculum	conical, ribbed.
Pedicels	0 - 2 mm.
Peduncles	3 - 7 mm.
Fruit	depressed-globular, truncate, ribbed, approximately 18 mm in diameter.
Valves	strongly exserted.
Flowers	March to December.

Identification

This distinctive species may be recognized by its large ribbed fruits and broad, lanceolate leaves. It is very similar to *E. pachyphylla* from which it differs in having more flowers per umbel and much shorter pedicels or sessile fruits.

Habitat and Distribution

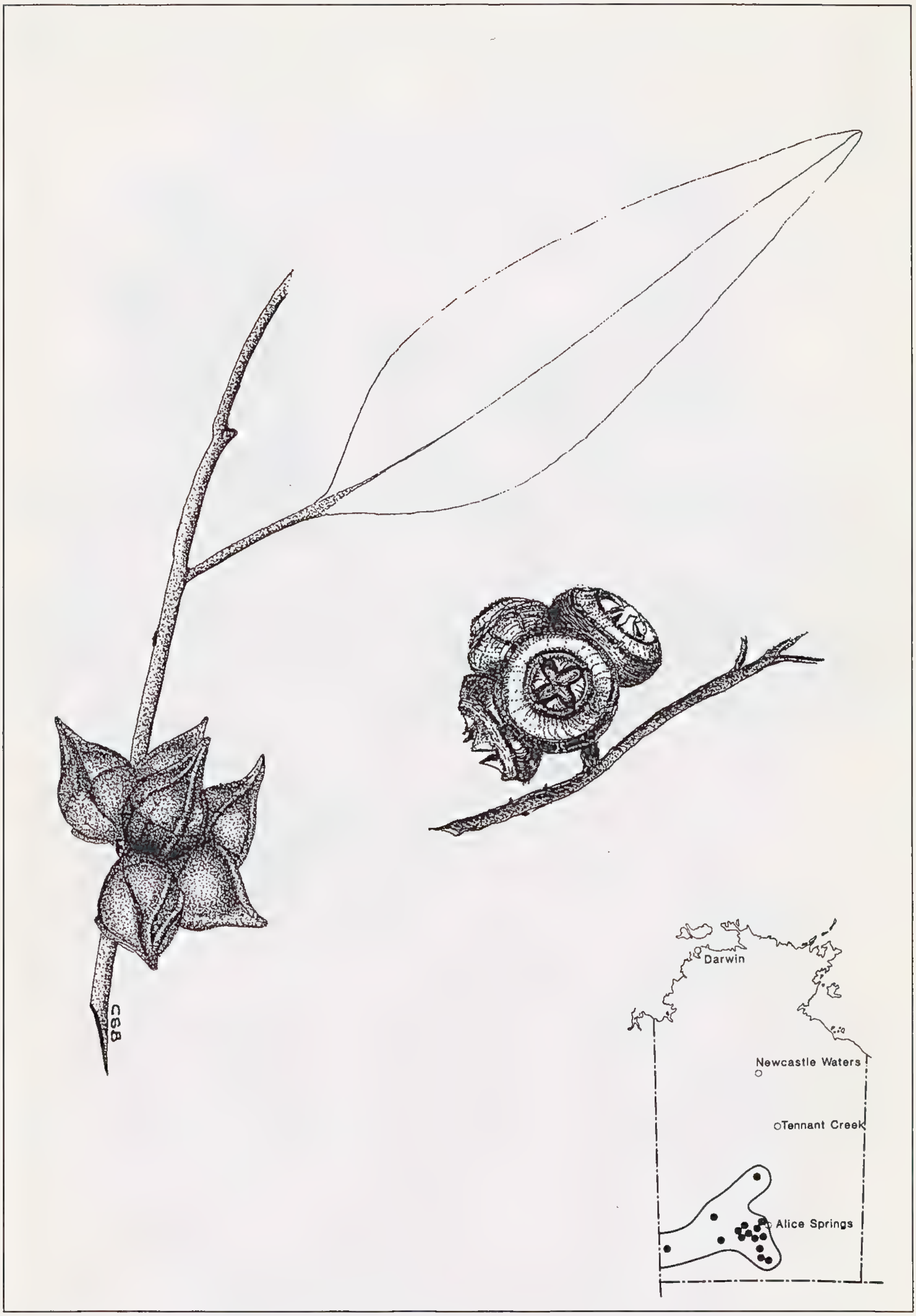
Restricted to rocky hill slopes in the western MacDonnell Ranges and extending south-west towards WA.

Propagation

E. sessilis has been grown successfully in a variety of soils and is frost tolerant. It usually begins flowering at age 3 years and by 5 years is flowering prolifically. Growth rates of 1 m after 3 years and, if given supplementary water, 2 m after 5 years and 4 m after 10 years have been recorded.

See Plate 22. Page 13.

Finke River Mallee



E. setosa Schauer

Name

Both the specific and first common name refers to the hairs on the twigs, leaves, buds and young fruit. The second common name alludes to the habitat in which this bloodwood is normally found.

Description

A small to medium tree 5 - 13 m high or occasionally a mallee.

Bark	rough, scaly, persistent.
Leaves	opposite, stem-clasping, hairy, ovate-lanceolate, 5 - 10 cm long.
Buds and flowers	red or yellow, in umbels of 2 - 7.
Operculum	hemispherical.
Pedicels	4 - 8 mm.
Peduncles	12 - 25 mm.
Fruit	ovoid to urceolate, 20 - 30 mm long 20 - 30 mm in diameter.
Valves	included.
Flowers	August to December.

Identification

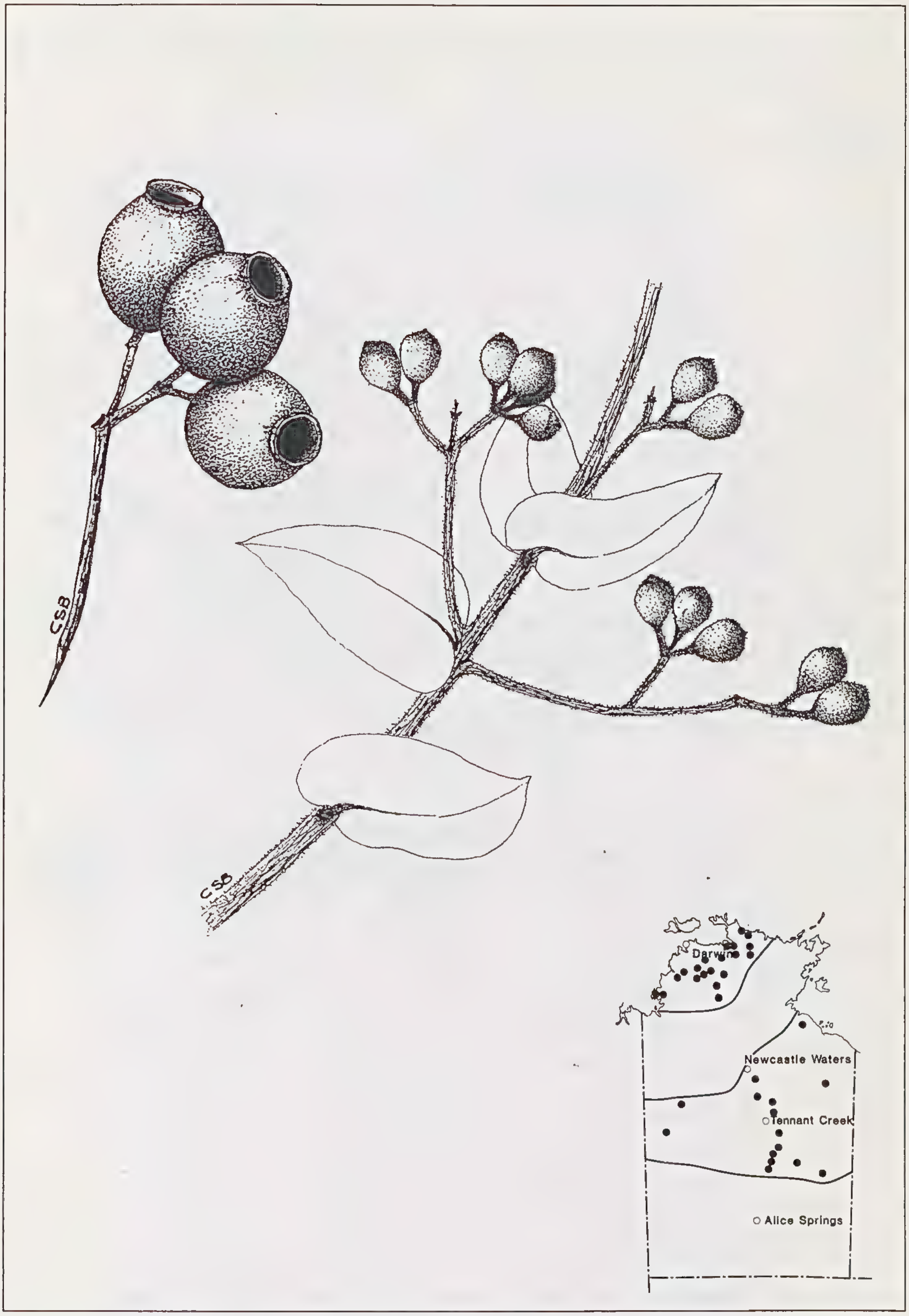
E. setosa is a rough barked species with large, urn-shaped, bloodwood fruits; rough hairy stems and opposite leaves. Only *E. deserticola* shares these characters but may be distinguished by its smaller fruits and leaves.

Habitat and Distribution

This species has a patchy distribution in the far north of central Australia where it occurs in deep red sand or rocky areas. It is found from the Kimberley region through the northern part of the NT to Qld.

See Plate 26. Page 14.

Rough-leaved Bloodwood, Desert Bloodwood



E. socialis F. Muell. ex Miq.

Name

The species name refers to the "sociable" nature of this eucalypt in that it commonly cohabits with other species of eucalypts. The common name refers to the red colour of the branchlets.

Description

A mallee 2 - 8 m tall, or sometimes a tree to 12 m.

Bark	smooth or shedding in long strips, the base covered with rough flakes.
Leaves	alternate, often glaucous, narrow to broad-lanceolate, 6 - 14 cm long.
Buds and flowers	in umbels of 3 - 15.
Operculum	long and pointed.
Pedicels	2 - 8 mm.
Peduncles	8 - 20 mm.
Fruit	urceolate, 5 - 8 mm long and broad.
Valves	long, sharply pointed and needle-like, exserted well above the rim, tending to break off easily in older fruits.
Flowers	April to November.

Identification

This species is distinguished by its sharply pointed buds, and fruits which have long, needle-like, exserted valves.

Habitat and Distribution

It occurs mainly in the vicinity of limestone and dolomite outcrops, usually with spinifex. Widespread throughout the southern NT and adjoining states, extending into NSW and Vic.

Notes

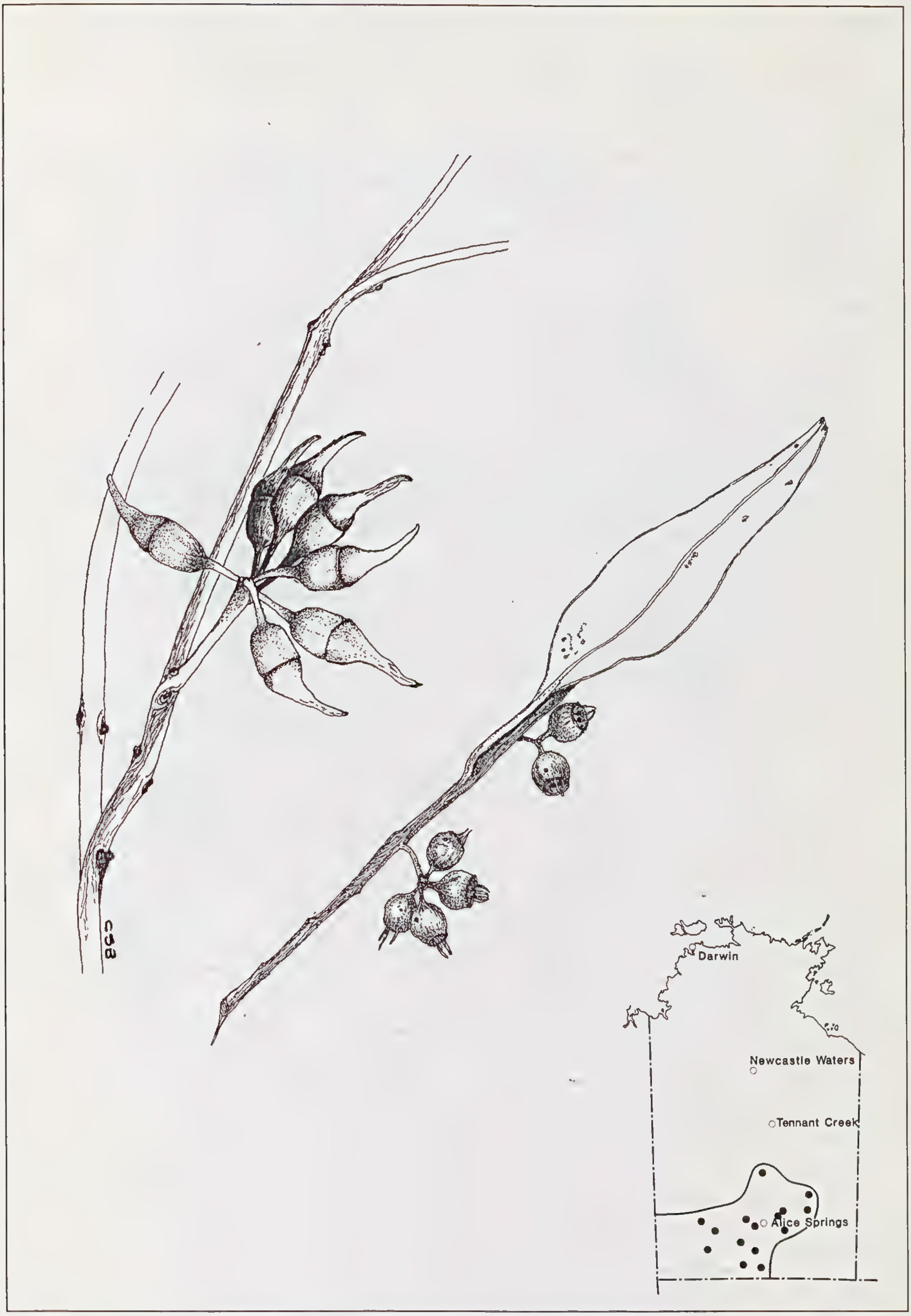
This species has also been referred to in central Australia as *E. transcontinentalis* and *E. oleosa* var *glauca*.

Propagation

This species will grow in a variety of soils ranging from sandy-clays to loams and is frost tolerant. Under good conditions it has grown into a small tree 1.5 m tall in 3 years and 3 m tall after 10 years. With supplementary watering *E. socialis* has grown into a small dense tree 3 m tall after three years.

See Plate 27. Page 14.

Red Mallee



E. sparsa Boomsma

Name

The species name refers to its 'sparse' distribution. There is no common name.

Description

Usually a small mallee to 6 m.

Bark	grey, smooth or rough, persistent on the trunk.
Leaves	alternate, glossy, mid-green, lanceolate to ovate-lanceolate, 5 - 12 cm long.
Buds and flowers	in umbels of 7 - 11.
Operculum	conical.
Pedicels	2 - 3 mm.
Peduncles	5 - 10 mm.
Fruit	cupular-hemispherical, 4 - 5 mm long, 4 - 6 mm in diameter.
Valves	included.
Flowers	July to August.

Identification

Within its limited NT distribution, this species may be mistaken for *E. mannensis* which also has shiny leaves, but may be distinguished by the included valves in its fruits. This species is found in rockier habitats than *E. mannensis* which usually occurs in sand dune and sand plain areas.

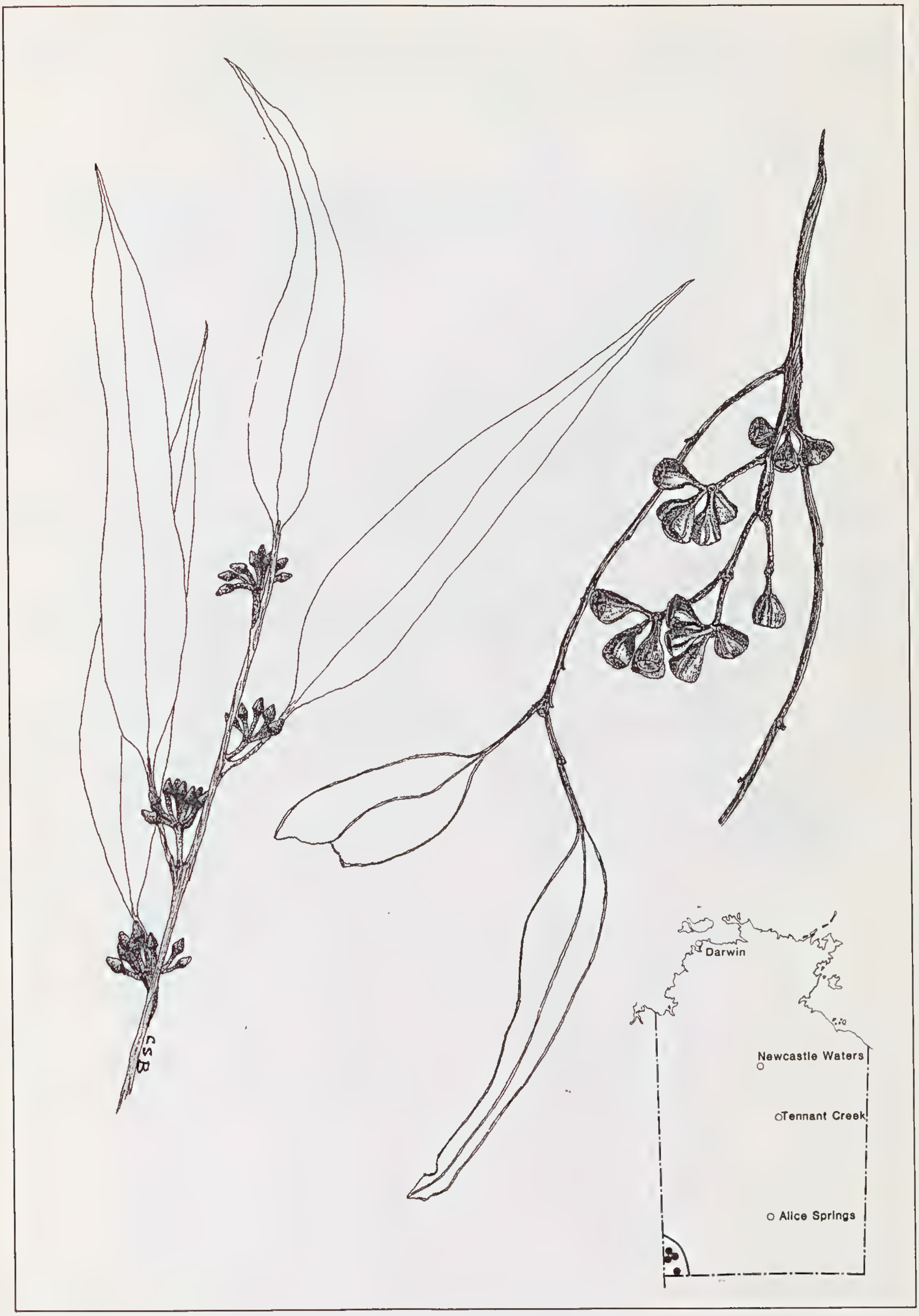
Habitat and Distribution

Found on hill slopes, gravel or outwash plains in north-west SA, south-west NT and adjacent WA.

Notes

Described in 1979. A rare plant in the southern NT.

See Plate 23. Page 13.


CSB
Darwin
Newcastle Waters
Tennant Creek
Alice Springs

E. thozetiana F. Muell. ex R. Baker

Name

Both the species and first common name refer to Mr Anthelme Thozet, an enthusiastic collector who originally supplied F. Von Mueller with material of the species from the Expedition Range, approximately 160 km west of Rockhampton, Qld. The second common name is of Aboriginal origin.

Description

A tree to 13 m tall.

Bark	smooth, cream to red-grey with occasional ribbons of bark shed at the base.
Leaves	lanceolate to narrow-lanceolate, shiny, light green, 7 - 14 cm long.
Buds and flowers	in umbels of 5 - 7.
Operculum	conical.
Pedicels	2 - 5 mm.
Peduncles	5 - 10 mm.
Fruit	cylindrical-urceolate to pyriform, 3 - 5 mm long, 2 - 3 mm in diameter.
Valves	deeply included.
Flowers	February to July.

Identification

This species is distinguished by its smooth bark and shiny leaves which are usually less than 1 cm wide.

Habitat and Distribution

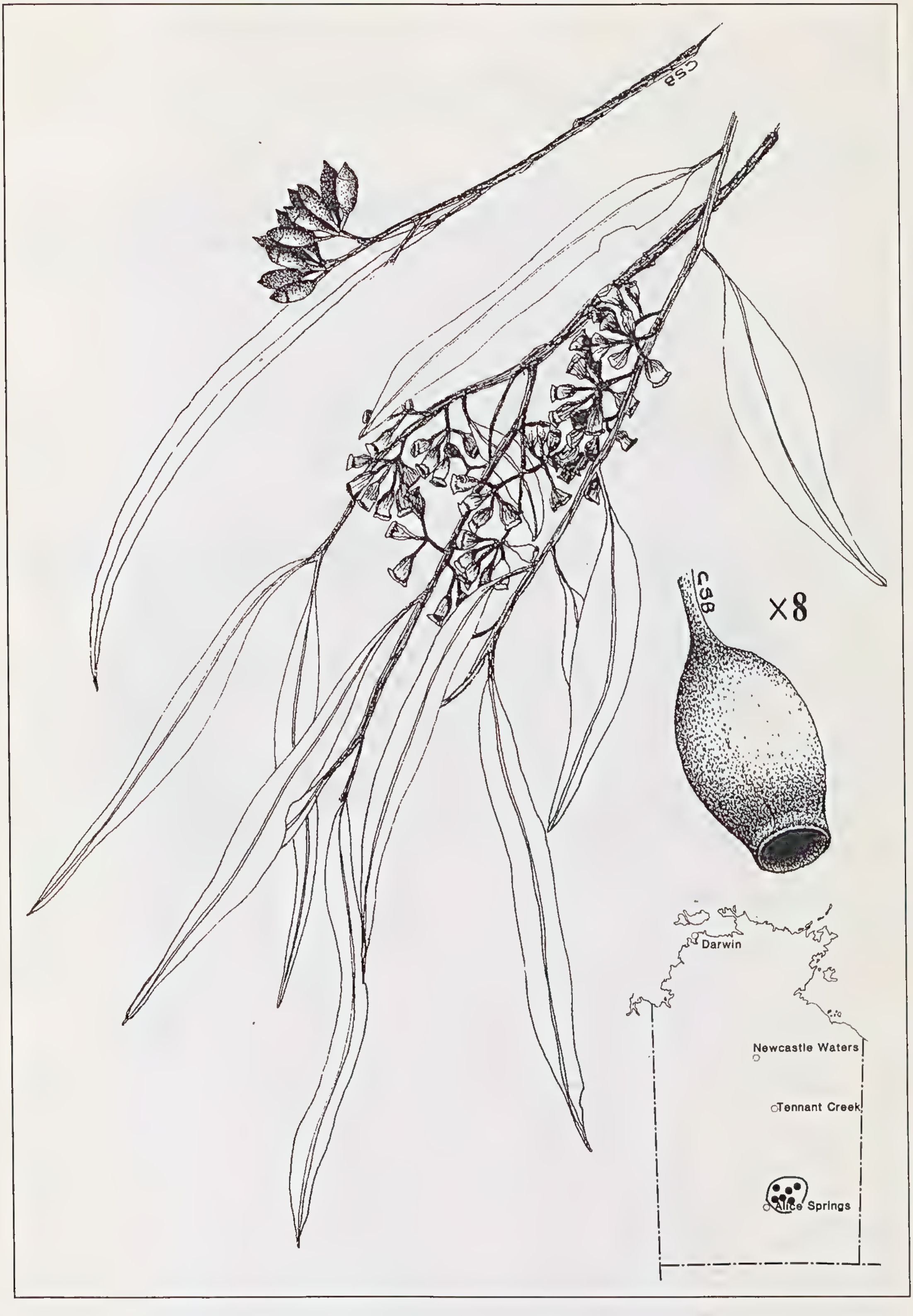
A disjunct distribution, occurring in south-east Queensland and in the central MacDonnell Ranges. In the NT it is rare with scattered stands occurring in the Ross River area and on the Garden Station. Found on quartzite and sandstone hills.

Notes

A very attractive species worthy of consideration as an ornamental but as yet untried in central Australia.

See Plate 28. Page 14.

Thozet's Box, Mountain Yapunyah



E. trivalvis Blakely

Name

The species name refers to the fruit which usually has 3 valves, and the common name to Queen Victoria Springs, WA where the species was first collected.

Description

A mallee to 4 m tall.

Bark	smooth, pink or grey-brown with ribbons peeling from the trunk.
Leaves	alternate, dull grey to pale glaucous green, narrow to broad-lanceolate, 6 - 9 cm long.
Buds and flowers	in umbels of 6 - 11.
Operculum	conical.
Pedicels	0 - 2 mm.
Peduncles	5 - 15 mm.
Fruit	turbinate-truncate, 6 - 10 mm long 4 - 6 mm in diameter.
Valves	level with, or just below the rim.
Flowers	January to August.

Identification

This species is similar in appearance to *E. socialis* but may be distinguished by its bluntly pointed buds and fruits which have included valves. Its pinkish bark and pale waxy green leaves give this species a characteristic appearance.

Habitat and Distribution

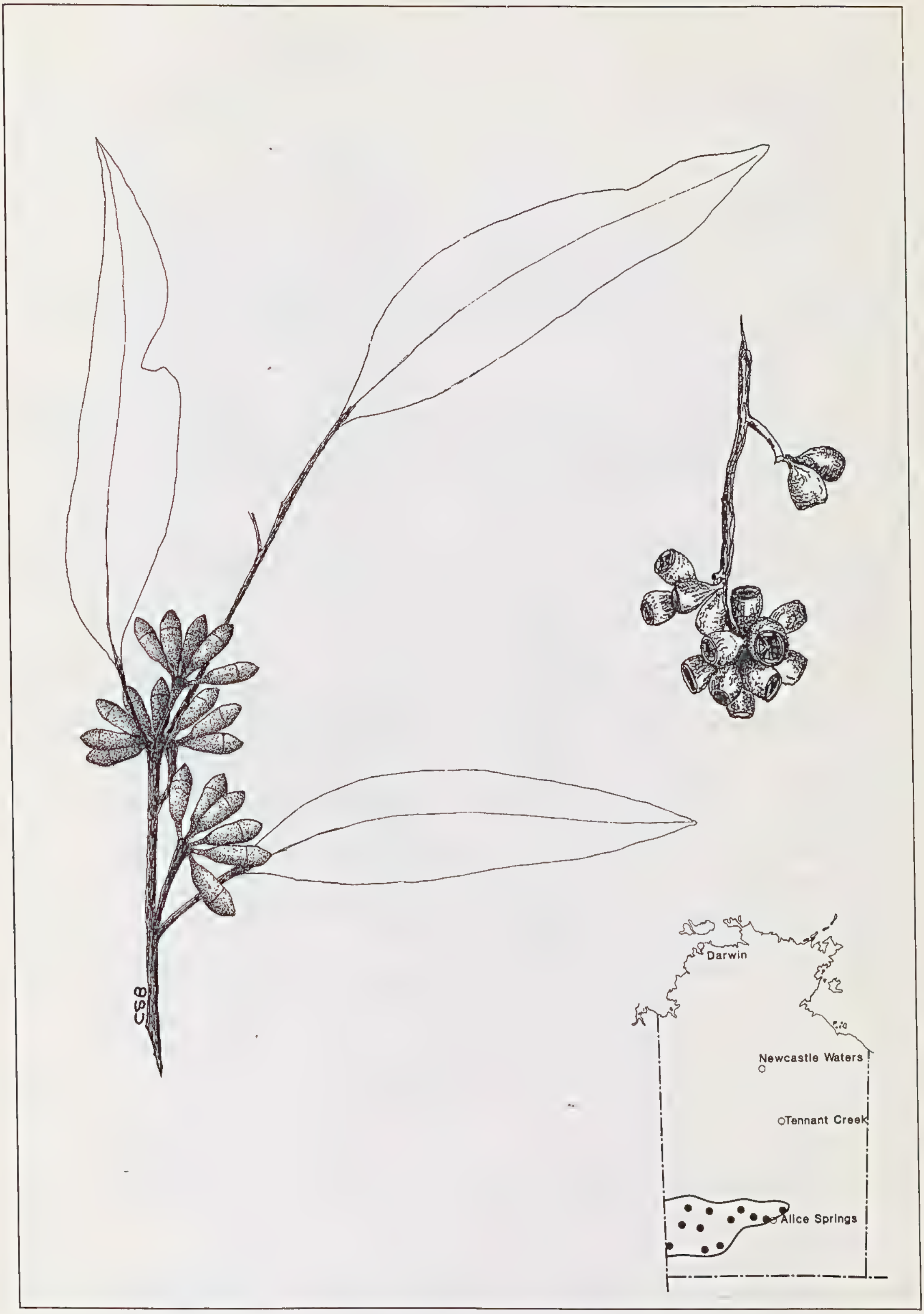
Found in far north-west SA, south-west NT, (south of the MacDonnell Ranges) and adjoining parts of WA. It occurs on sandy rises, in deep red sand or on rocky hill slopes.

Propagation

E. trivalvis is an attractive, frost tolerant species which has been grown in a variety of soils in the Alice Springs district. It has grown into a small mallee 1.5 m tall in 3 years and with supplementary watering has grown to 6 m tall after 10 years.

See Plate 24. Page 13.

Victoria Spring Mallee



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